APRIL 16, 1955

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MANAGEMENT • PLANT • TRAFFIC • COMMERCIAL • LEGAL • ACCOUNTING •

Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY

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Guaranteed Circulation This Issue

10,437 of Which 9,912 is Paid

XUM

2-10 System cabinet complete with power unit

No. 1543 standard desk set

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No. 1573 two-line telephone

BSystems

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In a typical system, "nonrestricted" stations can originate, receive and hold trunk calls while using the same telephone to talk within the premises. And even "restricted" stations have the advantage of fast, efficient dial service, of PX type.

These are just two of several outstanding advantages of new Stromberg-Carlson dial PBX Systems available in "2-10" and "4-20" capacities.

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If you want greater income, and better service, learn more about these remarkable new dial PBX Systems. Write or call your Stromberg-Carlson representative.

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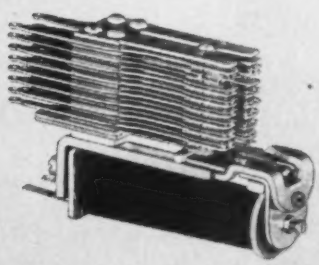
NO. 1573 TWO-LINE TELEPHONE for trunk-connected stations. Has selection switch and hold buttons for two trunk lines and one internal line.

NO. 1543 STANDARD DIAL TELEPHONE for non-trunk-connected stations. Offers top transmission quality, the extended number plate and the new lighter handset.



TYPE "A" RELAYS. Twin contacts of precious metal are exceptionally durable, adding years to relay life and providing trouble-free operation.

SELECTIVE TALKING

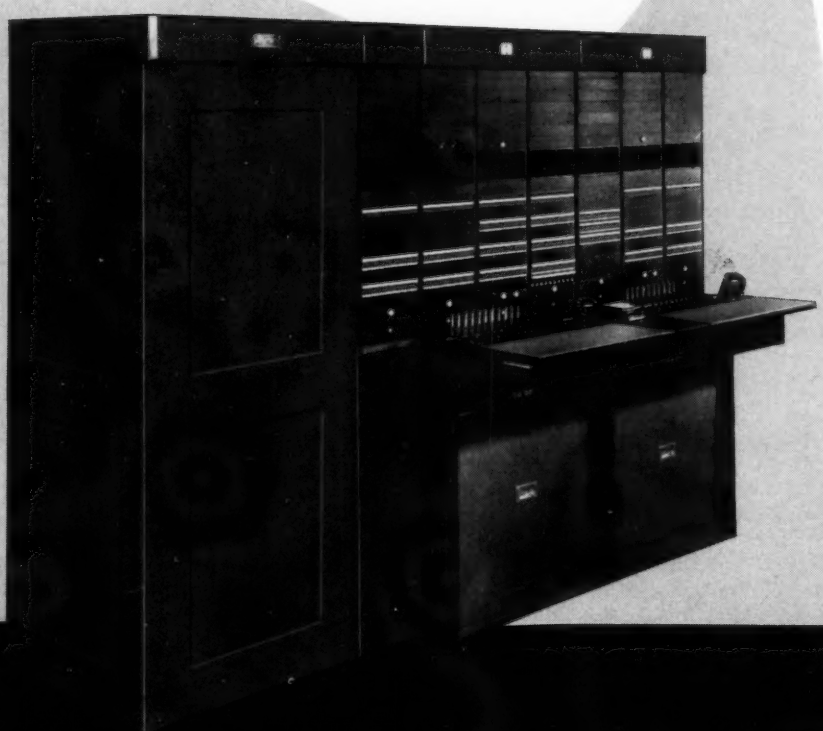
AUTOMATIC RINGING
No extra buttons to push

INSTANTANEOUS RINGING TRIP

DIAL **RINGING** **AND BUSY TONES**

XUM

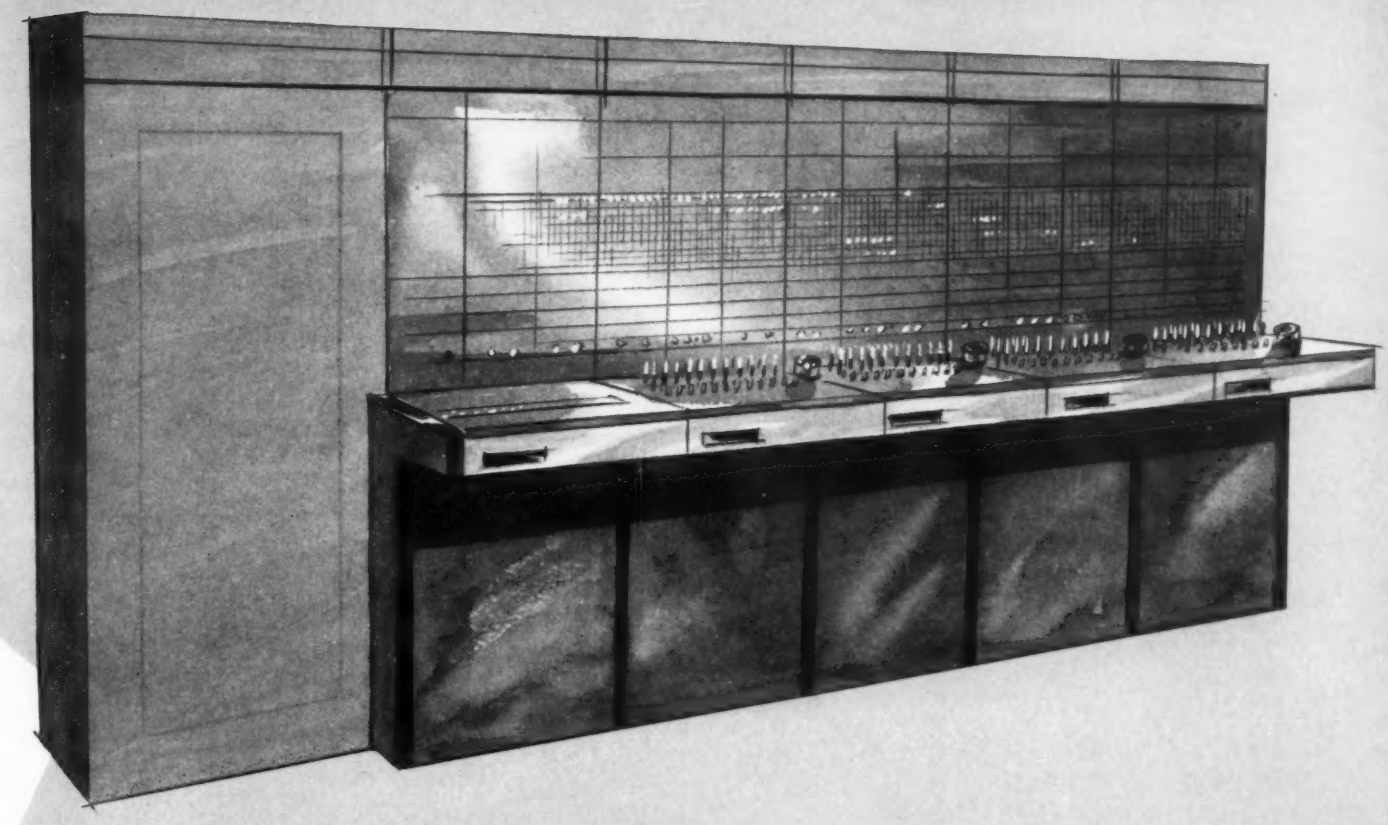
add this to this.



KELLOGG No. 3 TOLL BOARD
Now Available in 2-Position Size

(OR MORE AS NEEDED)

XUM



to give better local and toll service

Start getting ready for Dial Service—now! You will find it good strategy—sound forward thinking and doing—to add Kellogg's No. 3 Toll Board—in two positions or more—to your present manual equipment. Important *reasons—why* are listed at the right for your consideration.

1. The Kellogg No. 3 Toll Board will relieve your manual board of its toll load—give better service for both local and toll calls.
2. It will make you partially ready for dial, a start in the right direction.
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4. With the Kellogg No. 3, even small towns may have the fine toll service enjoyed by large cities.
5. Each position can be furnished with key sender pulsing which includes a simplified speed and ratio adjustment with automatic starts when digit keys are depressed.

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FLASHES AND PLUGS

DINNER BY DIAL. Dial a number and get a menu. That's just what some 3,500 Dayton, O., homemakers did on Mar. 20, resulting in a gigantic scramble that had nothing to do with eggs for breakfast.

After reading in the *Dayton News*' women's pages about a new telephone service, first of its kind to be offered in the United States, nearly 4,000 cooks jumped to their telephones.

The menus are given by a recorded voice under a program launched by the Dayton Milk Foundation and they offer suggestions for breakfast, lunch and dinner.

After thousands of calls heated up the two recording devices and distorted the recording beyond recognition, Ohio Bell Telephone Co. installation men came to the rescue. They installed two extra lines.

Idea for the service was started by a shortwave broadcast which told of a similar telephone answering service in London. Response there was so terrific that the whole London telephone system was bogged down for a time.

• • •

MODERN TEMPO. The "Milwaukee Journal" vouches for the following verbatim account of a telephone conversation with a local youngster:

"When will your mother be home?"

"Later. After Foreman Tom comes on."

"What time does Foreman Tom come on?"

"Do you know when Howdy Doody comes on? Right after that."

"What specific time, though, are you expecting your mother?"

"During the commercial."

• • •

CLOSE CALL. Two men entered adjacent booths at the St. Louis Union Station and called the same number. By accident, the two calls were connected together, and the men found themselves talking to each other.

One berated the other for not meeting him at the train, while the other stoutly argued he was then waiting for the other.

They finally found out they were within a few feet of each other, stepped out of the booths, shook hands and went on their way.

• • •

SINGLE SEATS ONLY. A telephone subscriber called the "information" operator and requested the number for a local theater. In placing the call, however, he dialed incorrectly and, without asking to whom he was talking, asked, "Can I have a box for two for tonight?"

A startled voice answered, "We don't have boxes for two."

"Isn't this the Mercury Theater?" the caller asked crossly.

"Why no," was the reply, "this is the funeral home."

The order was cancelled.

CIRCULATION

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Here's Proof of Performance...

302 pressure-creosoted poles installed in 1928 ... *only one replacement* due to pole failure

CENTRAL HUDSON GAS & ELECTRIC CORPORATION, serving the Mid-Hudson Valley, with General Offices at Poughkeepsie, N. Y., has more than 100,000 pressure-creosoted poles in its system. The company began using pressure-creosoted yellow pine poles in 1926, one of the first lines to be built being the River Transmission Line from Highland to Newburgh, a distance of approximately 16 miles.

This line was installed in 1928 and 1929, using 302 40′-60′ poles. To date, ten poles have been replaced, but only one due to wood failure. Boring tests made recently show the poles are still extremely sound.

In specifying poles, it will pay you to follow this utility's example and rely on Creosote's unmatched records of service. And when you do, be sure your poles are pressure-treated with uniform USS Creosote. Its deep penetration, retention and high toxicity assure you maximum pole life. For complete information, contact our nearest Coal Chemical sales office, or write directly to United States Steel Corporation, 525 William Penn Place, Pittsburgh 30, Pa.

See "THE UNITED STATES STEEL HOUR"—Televised alternate weeks—Consult your local newspaper for time and station.

1929 dating nails on this pole are evidence of the long, economical life of pressure-creosoted poles.

John J. Sotanski, Central Hudson Estimator, inspects pressure-creosoted poles in the company's River Line which have been in the ground more than a quarter century and are still sound, according to recent boring tests.

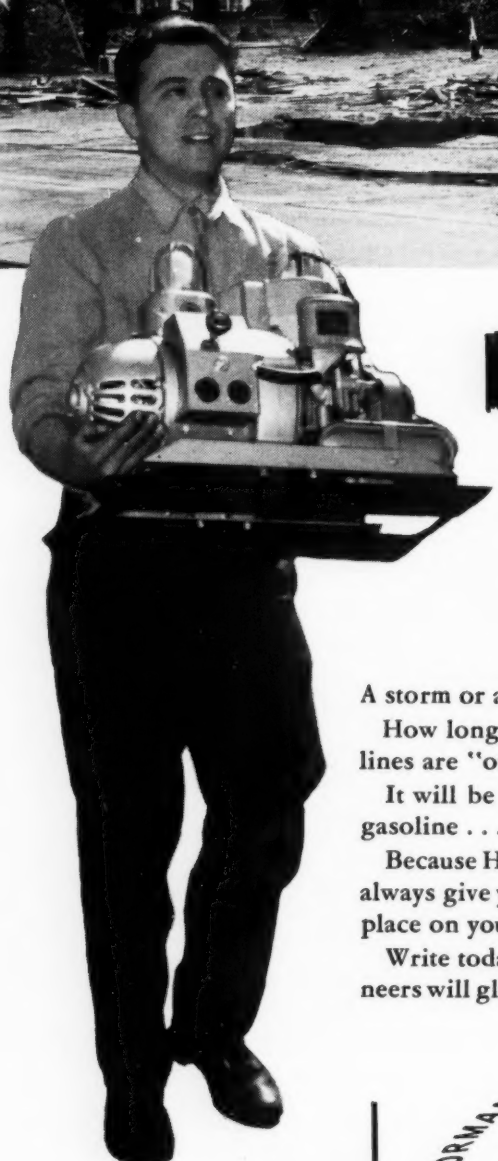
USS CREOSOTE

SALES OFFICES IN PITTSBURGH, NEW YORK, CHICAGO, CLEVELAND, SAN FRANCISCO AND FAIRFIELD, ALA.

5-220

UNITED STATES STEEL

XUM



HOMELITE STANDBY POWER

A storm or accident cuts your normal power supply.

How long will your batteries last? How long will it be before your lines are "out of order"?

It will be a long, long time . . . in fact, just as long as you can get gasoline . . . if you have Homelite standby power.

Because Homelite gasoline-engine driven Carryable Generators will always give you the power you need to keep your lines "in order" any place on your system.

Write today, stating your standby requirements and Homelite engineers will gladly submit the best suggestions as to fulfilling your needs.

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Blowers • Chain Saws

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"Longest train I ever rode, engine's way down at the next pole!"

● Perhaps our brakeman friend is exaggerating just a bit. However it is a long way between these poles . . . they're strung with Amertel 135.

When you use Amertel 135, which is 2½ times as strong as ordinary BB wire, fewer poles are necessary. It may cost more, but it *saves* money. Figure it out: fewer poles . . . less pole hardware . . . less digging . . . and fewer manhours. And maintenance costs are materially lower.

Amertel 135 has low electrical resistance. And it has far better voice transmission characteristics than the old steel wire.

Write today for further information. American Steel & Wire Division, Rockefeller Building, Cleveland 13, Ohio.

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GENERAL OFFICES: CLEVELAND, OHIO

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UNITED STATES STEEL EXPORT COMPANY, NEW YORK

USS *Tiger Brand* AMERTEL

TELEPHONE & TELEGRAPH WIRE

USS

UNITED STATES STEEL

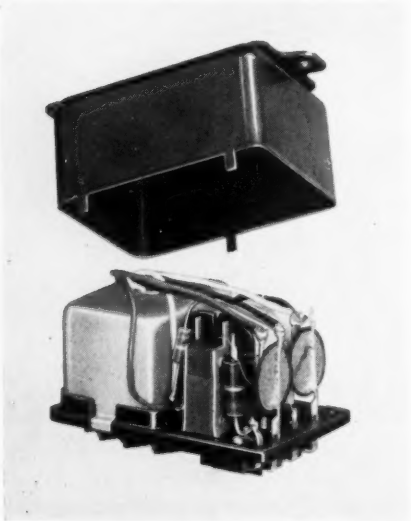
What you should know about

THE LEICH

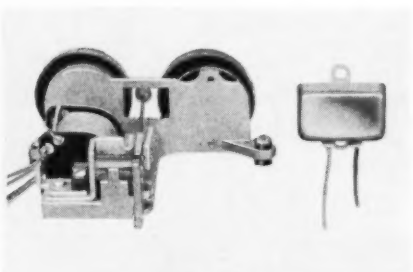
Although the Leich 100 telephone is outwardly similar in appearance to the previous model 700 instrument, several important changes in the working parts make it much superior in performance.

Improvement in Transmission and Reception

The Leich 100 telephone is equipped with the new Western Electric T1 transmitter and the U1 receiver. These are the same as are used in the newest Bell 500 type telephones, and which have become so famous for the gains they provide over all previous models. The improvement in transmission and reception is especially effective on long and heavily loaded lines. In addition, the Leich 100 telephone utilizes the new network which is made under license from Western Electric. This



Leich 100 network controls the sidetone effect to retain the improvement in transmission and reception. It also has a compensating factor so that the volume of voice reproduction is automatically controlled on long and short lines. The network includes the induction coil, capacitors, associated resistors and W. E. varistor units, sealed in one compact unit with microcrystalline wax.

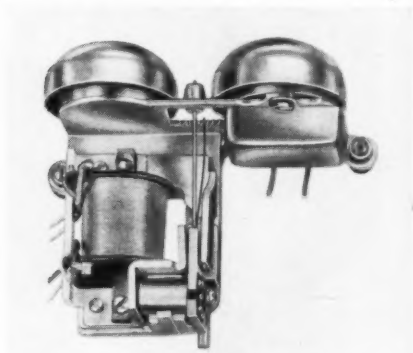


Ringing Condenser <u>not</u> in network

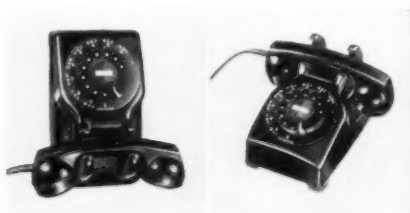
While incorporating the network in this new telephone to take advantage of the terrific improvement in transmission, we have made one improvement in it which is of economic importance to the telephone company. The ringing condenser is *not* included in the network as in other makes of telephones. It is mounted on the ringer, and thus, should the ringing condenser be shorted out or damaged, it can be easily and inexpensively changed without replacing the entire network.

High Impedance Ringer

The Leich ringer is of the single-coil, high impedance type which draws less current, thus is better for heavily loaded lines. The high impedance also reduces noise induction on divided ringing circuits. A graduated adjustment makes for more accurate adjustment of the biasing spring. The same single-coil is used for all ringers regardless of frequency. The Leich



ringer is available for straight line, harmonic, synchromonic or decimonic ringing.

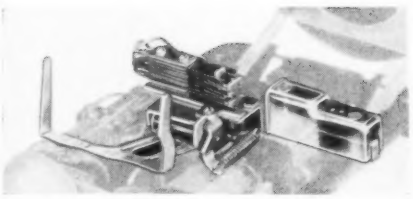


Same Instrument Serves for Wall or Desk Installations

For desk use, set this Leich 100 telephone down. For wall installations you merely turn it over and mount it on the wall. There's nothing to change, add or buy. The unique Leich hookswitch and saddle arrangement makes this practical feature possible. In this way, you need to stock fewer instruments, your installer has the correct telephone even when the customer changes her mind. This feature was developed by Leich, has proved its worth in hundreds of thousands of installations.

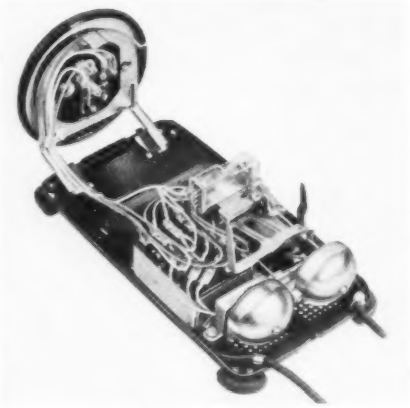
LEICH

100 TELEPHONE



Hookswitch Proved-In-Service

This is the same hookswitch that was designed for our previous model telephone. It has worked out very satisfactorily in service. It is operated by a simple lever action with an auxiliary actuating spring. The make and break springs are accurately positioned by card type stops similar to those in a relay. There is considerably more contact and pressure on the springs than on any previous model.



Simplified Maintenance

Even the small photograph at the top shows how accessible all parts are for maintenance or adjustment. A screwdriver is the only tool you will ever need. The convenient dial mounting bracket makes it so easy to add a dial and brings the dial into the proper position for adjustment. Spade connections on the terminal block make it a simple matter to adapt the circuit for different line requirements.

Extra Features

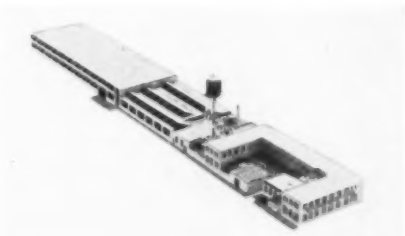
On dial models, the 100 telephone uses the A. E. Company dial as standard but may be equipped with Western Electric dials if they are preferred. The extended dial ring with the numbers outside the dial is easier to read, prevents wrong numbers. Metropolitan numbering will be furnished unless otherwise requested. Mounting space is provided in the base for all current types of ringing tubes. There is a handy finger lift space at the rear of the instrument. For party line service, a hookswitch latch may be had at a slight additional cost.

For Every Type of Service

The Leich 100 telephone is adaptable for every type of service in general use. Every type of ringing is available including the use of ringing tubes and superimposed ringing with untuned straight-line ringers. Spotter dials for automatic toll ticketing are also available.

Built to Last

The injection molded thermoplastic case will give, but it won't break. The base is a solid piece of heavy metal. The standard neoprene cord or Koiled Cord are reinforced where they enter the handset. The hookswitch springs have a transparent plastic cover to protect them from dust. The fact that this telephone can be used as a wall model helps to prevent maintenance trips. By installing the Leich 100 telephone as a wall model, you eliminate the possibility of having it dropped on the floor.



This is the modern Leich factory where these telephones are made. We've a hundred thousand square feet of floor space. Our skilled, experienced people are equipped with modern tools and machines. They're proud of the telephones they make and the care they use in building them.

MANUFACTURERS OF TELEPHONES, SWITCHBOARDS AND RELATED APPARATUS SINCE 1907

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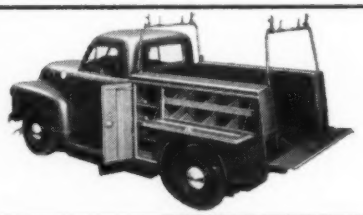
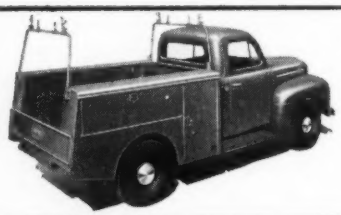
May we help you with your service body problems? Complete details will be sent upon request.

Series 44L and Series 44 (shown above) designed for any general service work. Fully-equipped with shelves and bins. For ½, ¾, 1, and 1½ ton chassis.



Series 25T and 35T arranged for telephone installation and service. Widely used in other phases of utility work. Available in ½ and ¾ ton sizes.



Series 25M and 35M used for all types of general service. Especially suitable for electric meter installation and maintenance. Models for ½ ton and ¾ ton vehicles.

Series 25G and 35G designed for use in the installation and servicing of gas meters. Equipped with meter hold-downs, bins, and pipe rack. In ½ and ¾ ton sizes.

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by FRANCIS X. WELCH — WASHINGTON EDITOR

Violence and vandalism in Southern Bell Telephone & Telegraph Co. strike deplored. . . . Union members warned that their union is losing the confidence of the public in destroying a vital public service through damaging of communications facilities. . . . Union leadership which condones and encourages such tactics misjudges temper of American people.

ATLANTA, MARCH 15—An attempt to cut the main telephone cable at police headquarters was discovered. Neither the telephone company nor police would say that the lines were cut by strike sympathizers.

BESSEMER, ALA., MARCH 15—Vandals with axes and hatchets chopped up a telephone line in 15 places near Bessemer. There was also an attempt to cut one line in North Birmingham. C. E. Gill, CWA (Communications Workers of America) assistant southern director, said, "The union neither initiates nor condones incidents of this nature. We have no knowledge of it. It is not of our doing."

BIRMINGHAM, MARCH 17 — Arthur Murphy Jr. of Lipscomb, Ala., died at his home, which later burned to the ground. Neighbors who spotted the fire were unable to make a telephone alarm because service in the area was knocked out by vandals who had cut cable lines.

MONTGOMERY, ALA., MARCH 18—A Southern Bell official said a second telephone cable cutting was definitely a "professional" job by someone with "plenty of experience." J. H. Campbell, president of the Montgomery local of CWA, said he was certain that none of the striking union members were responsible for the cable cutting. He said the union plans an investigation in an effort to find the vandals.

BIRMINGHAM, MARCH 29—Henry H. Bolin, president of the Birmingham local of CWA, was arrested on a charge of planting a stink bomb across the alley from a telephone office building. As he left the courthouse, Bolin said that Southern Bell "would resort to any sort of antagonistic measures to discredit our organization. We hadn't resorted to tactics like this."

ATLANTA, MARCH 30—David C. Baity was wounded in the leg by gunfire from a passing car while working in suburban East Point, Ga. He was repairing property illegally damaged. Atlanta police arrested two young strikers at the CWA hall after tracing the license number of a rented auto. According to the press report, local CWA officials claimed ignorance of this incident, professed shock that such a thing had happened, and suggested that Southern Bell officials would do anything to make the union "look bad."

BIRMINGHAM, MARCH 30—A dynamite explosion rocked the south side, damaging a porch at the home of two Negro Southern Bell Telephone & Telegraph Co. workers.

COLUMBIA, S. C., MARCH 31—A coaxial cable was dynamited, knocking out 1,000 telephone circuits shortly after the president of the striking CWA union told the members there that they were not "mad enough." CWA President Beirne said that the union does not condone any form of violence. According to the Savannah *Evening Press* of Apr. 1, he first accused the company of using strike breakers to maintain service, and then told the massed pickets that "your people in Columbia are not mad enough. I saw pickets waving below to the 'scabs' as they crossed the picket line."

ATLANTA, APRIL 2—A shotgun was fired into the home of a non-striking employe of Southern Bell, at nearby Dalraida.

MARYVILLE, TENN., APRIL 3—Southern Bell Telephone & Telegraph Co. evacuated and shut down its exchanges in this community of 30,000 persons on orders of the mayor, Lee Calloway. He said he could no longer guarantee the safety of life and property, and expressed great fear of bloodshed and extensive violence. The district manager had received a warning: "If there is anybody in there at 4 a.m. we're coming in to get you." This was the first time in 75 years that the company had to shut down service at an exchange, under duress.

ORLANDO, FLA., APRIL 3—Donald E. Carpenter, a five-year employe of the Southern Bell Telephone & Telegraph Co., was arrested and booked on charges of slashing six cables with an axe. Sheriff Dave Starr quoted Carpenter as saying "I cut the cables and I'm sorry I did it."

ORLANDO, FLA., APRIL 5—The presi- of the CWA local 3108, John A. Bucy Jr., resigned from his post and went back to work reportedly because he did not condone acts of vandalism. Bucy was quoted by the International News Service as telling union members that the strikers were "making fools of themselves" by various incidents of vandalism, and that he "didn't want any part of it."

ATLANTA, APRIL 7—A general survey of strike violence showed three small Southern Bell Telephone offices in Tennessee closed, and a state of emergency existing in Birmingham. Birmingham police moved to prevent a repetition of egg throwing by pickets. They finally broke up a demonstration of 200 persons massed at nearby Bessemer telephone company offices to block off non-striking employes. In seven other states served by the company, there were reports of widely scattered damaged cables and other strike violence.

Heroism in Reverse

The foregoing series of news items, selected at random from press clippings, do not by any means constitute a complete briefing of the record of

XUM

the Southern Bell Telephone & Telegraph Co. strike violence during the period covered. They have been repeated here simply to emphasize a very obvious pattern of progressive violence, for which the union disclaims responsibility.

Now, union officials are generally reputed to be honest and trustworthy men. When they say that their unions had nothing to do with this, that it was done without their knowledge, approval, or condonement, they are entitled to be heard. The big mystery arises then: Who is cutting cables? All of these things cannot be merely coincidence. It is clear that dangerous hooligans are loose in the southern states with shotguns and axes; and that they are damaging property and endangering lives of innocent people.

True, the union's disclaimer of responsibility wears a little thin, when we read of such items as that of President Beirne telling the Columbia strikers that they were not "mad enough" because pickets were too cordial with non-strikers—followed by a coaxial cable dynamiting in the area three hours later. The repeated explanation that the union has nothing to do with these outbreaks of violence also wears thin, when we note the resignation of a local union president, in disgust, after one of his own members had admitted, upon arrest, cutting six cables.

There is, of course, the rather startling suggestion by some union officials that all this is, somehow, the dirty work of the company's management. Can anyone seriously believe that company officials, by personal action, or by hiring hoodlums, cut their own cables, shot up their own employes, and started egg-throwing riots? Union spokesmen who ask the public to believe this, are simply asking too much. It is an insult to even a stupid man's intelligence. *The plain fact is that whether the union is responsible or not,*

NEW REA LOANS GO TO FOUR STATES

The REA approved $1,079,000 in four loans for improving and extending telephone service in rural areas of Idaho, Kentucky, Alabama and Utah, the U. S. Department of Agriculture announced on Apr. 2.

Custer Telephone Cooperative, Inc., Challis, Idaho, on Mar. 28 was granted $403,000 to improve and extend rural telephone service in Blaine, Custer and Lemhi counties.

As a nucleus for the system, the newly organized cooperative plans the following acquisitions: Challis Telephone Co.; Pahsimeroi Telephone Association; and rural outside plant facilities extending from Lake Alturas to Lower Stanley from the U. S. Forest Service and the Mountain States Telephone & Telegraph Co. These telephone properties are now serving 244 subscribers over 134 miles of line.

With the REA loan, the Custer cooperative will construct new automatic central offices at Challis, May and Stanley, add 269 miles of new line, and rebuild 25 miles of the existing line.

The rehabilitation and new facilities will make it possible for the organization to offer improved service to the existing subscribers and to serve 237 rural families in the service area now without telephones. The completed system will consist of 325 miles of line, furnishing dial service to 481 subscribers.

C. C. Rittenhouse is president of the Custer cooperative.

* * *

Calvert Telephone System, Inc., Calvert City, Ky., on Mar. 31 received a loan of $252,000, second loan to this company.

The borrower proposes to use these loan funds to improve and expand rural telephone service in Livingston county. The Calvert system will use its own funds to acquire the Smithland Telephone Co., serving 254 subscribers over 67 miles of line, in and around Smithland.

These properties will be rehabilitated and expanded but not integrated with the Calvert City section of the system, as the two areas are separated by the Tennessee River.

About 53 miles of the existing line will be rebuilt and 94 miles of new line and other facilities added to bring telephone service for the first time to 269 rural families in the community. The Smithland section of the Calvert system, when completed, will consist of 152 miles of line furnishing dial service to 523 rural subscribers.

The two REA loans, totaling $704,000, will make it possible for the borrower to serve 1,810 rural subscribers over 229 miles of line in Marshall and Livingston counties.

Automatic offices will be located at Calvert City and Smithland.

LeRoy T. Carlson is president and William Thomason is manager of the Calvert system.

* * *

The Arab (Ala.) Telephone Co., Inc., on Apr. 1 received a loan of $363,000 to finance the improvement and extension of rural telephone service in Blout, Cullman, Marshall and Morgan counties.

The company presently furnishes magneto service to 219 subscribers over 23 miles of line.

With this loan, the Arab company plans to convert the existing system to dial operation, add 154 miles of new line and other facilities to serve 624 subscribers now without telephones. A new automatic central office will be constructed at Arab. The system, when complete, will consist of 176 miles of line.

L. D. McDonald is president of the Arab company.

* * *

South Central Utah Telephone Assoc., Richfield, was allocated a loan of $61,000, on Apr. 1, second loan to this borrower. These loan funds will be used to serve an additional area in the present operating territory in western Iron county which was not included in the first loan.

The borrower plans to acquire from the Mountain States Telephone & Telegraph Co. one mile of toll line in this area, serving one paystation, the only telephone service in this community.

The two REA loans, totaling $401,000, will make it possible for the South Central Utah association to furnish dial service to 700 subscribers in Garfield, Iron, Kane, Piute and Sevier counties.

The completed system will consist of 219 miles of line and automatic offices at Boulder, Escalante, Koosharem, Orderville and Tropic, in addition to Beryl Junction which will serve the non-contiguous area in Iron county.

Victory Magleby is president of the South Central Utah Telephone Assoc.

the public is giving the union credit for these continued acts of violence and vandalism.

That is a plain enough fact. It is a fact to which telephone company workers, whether union members or otherwise, should give careful consideration during this unhappy experience. It is a hard fact—not just somebody's opinion, on one side or the other of the strike fight. Can the union members possibly benefit from such violence?

Without going into the merits of the Southern Bell strike, it is very likely that the outcome of the strike will depend a good deal on the public's reaction. If the persons who committed these acts of violence thought that the public would react with a demand that the strike be settled immediately on terms favorable to the union, it ought to be pretty clear by now that they were badly mistaken! What is more tragic, it ought to be pretty clear *to all of the strikers* that they have been badly guided if they expected public sympathy to result from such activities!

How can the public sympathize with the cutting of cables on at least two occasions to the Emory University Hospital at Atlanta, Ga.? Anyone who would sabotage the only outside communication to a large number of sick people, with constantly recurring emergencies, must have a great deal on his conscience.

And yet we all know so well that telephone workers, union and nonunion, are not hoodlums. They do not usually carry guns around city streets. They do not habitually commit acts of assault and violence against their fellow workers or wilfully endanger the lives of innocent people. These strikers are good citizens. They are honest, intelligent, hardworking men and women, some with many years of service. They are trying to raise industrious, Godfearing families, to buy their own homes, to educate their children, and otherwise to conform to the American way of life.

So what happened here? What's all the shooting about? Who could have turned some of these model citizens into a bunch of marauding gangsters—if the plain implications of the police court proceedings can be believed?

There seems to be only one answer —the leadership. Whoever thought of this plan for winning a strike—if that is what it is—has so gravely misjudged the temper of the American people that he has forfeited the right to lead anybody. He is a liability to the cause he professes to serve.

All good citizens can, under the pressure of emotion and other adverse circumstances, fall from grace. How many heroes with brilliant war records have returned to civilian life only to end up with tarnished records? We need only recall the recent tragic death of one of the heroes of the Iwo Jima flag-raising to realize that the "descent from the heights" is all too easy for any of us. None of us can judge our fellow man, nor cast the first stone.

Telephone workers are not strangers to heroism. It is an occupational habit with them. They can be rightfully proud of it. Year after year, they turn in records of outstanding heroism. All of their training and experience breeds almost an instinct to guard the equipment placed in their care, because they know that it can be a life line of public service. But like the fallen hero of Iwo Jima, corrupting influences can pervert the best of us, if we let them. Heroes can turn into hoodlums; if they get enough bad advice, from enough people who are supposed to be their friends and leaders.

Nineteen years ago when one of the most destructive tornadoes struck the little town of Tupelo, Miss., taking an appalling toll of lives and property, the telephone operators and repairmen were among the great unsung heroes of the disaster.

Last month, another tornado struck Tupelo and muddy flood water rolled knee-deep through the homes. What was the attitude of some of the telephone strikers in such an emergency? It only could be summed up in four words: "The public be damned." Idle workmen stood around sneering at the efforts of supervisory personnel trying desperately to restore lines damaged by the tornado.

It is hard to believe that these are the same people, as some of them undoubtedly were, who performed so heroically nearly two decades ago.

Unions Are Getting Hurt

Nothing has been said here about the merits of the strike. That should be settled peacefully by honorable bargaining methods between the union and the employers. But it should be clear by now that the union has not come out of this very well in the public eye.

Some union members naturally believe leaders who claim that the whole thing is a plot to "destroy" their union. Whether they believe that company officials would like to destroy their unions or not, they should in their own self-interest look facts in the face. Their unions can very well be destroyed by these acts of violence. They are being discredited. They are wearing the public's patience to the breaking point. *Whoever is responsible for these acts of violence, the same are the ones who are really destroying the union!*

A union is a sacred thing. No one has a right to hurt it or try to destroy it. That goes for members, as well as management. It ought to go double for union leaders. The union should be the summation of the ideals of its members—to help each other better themselves in their chosen calling. It is entitled to their loyalty—but in an intelligent way. The most loyal member of the telephone union might well be the local president in Orlando, Fla., who got sick of being expected to lie, and cover up for what he knew perfectly well were acts of violence being committed by some of his local members.

When he resigned because he could stomach it no longer, he may well have proved more of a friend to the real union movement, among telephone workers, than all the hot-heads and firebrands who roam about the country, imploring the strikers to "get mad."

Telephone workers have a lawful right to picket and they have an inalienable right to stay away from work as long as they please during periods of legitimate strikes. But the day they take a shotgun in hand or otherwise deliberately engage in acts of violence against their fellow workers, company property, or public safety, they become traitors to their union as well as traitors to their industry. They can regain their good name and reputation only by disavowing such acts, and any reckless, irresponsible leadership which insists upon such a program.

Of course, we must be fair to those union leaders who insist that they know nothing about all this, that they deplore violence, and warn us that the whole thing is a plot to destroy the union. Union leaders are honorable men. They are entitled to be heard and believed. Brutus was an honorable man. He stabbed Caesar in the back—his best friend—remember?

Facts to Employes

"We have the job of telling our employes the facts as they are today and as they undoubtedly will be for some time to come. We need their help in meeting situations and, in turn, they will help themselves in obtaining greater job security." — L. M. CASSIDY, *chairman of the board, Johns-Manville Corp.*

XUM

MARVIN E. WINANS, (left) and C. C. FIELDS JR., who designed the paystation collection vehicle for the General Telephone Co. of California.

New Paystation Collection Vehicle

A COMPLETELY new type paystation collection vehicle has been developed and put into service by the General Telephone Co. of California. The new design offers speed of operation, uninterrupted security, good visibility and ease of handling at a low cost.

The design of this vehicle was prompted by dissatisfaction with the collection trucks formerly employed by the company, and the inadequacies and high cost of other available collection equipment. Early in 1954, M. E. Winans, commercial projects engineer, was requested to study collection vehicles used elsewhere in an effort to find one more suited to collection work. Mr. Winans, together with his assistant, C. C. Fields, Jr., undertook to design a vehicle which would incorporate all the desirable features.

It was immediately apparent that unlocking a safe or sliding door each time a collector returned to his vehicle was time-consuming and resulted in a momentary breach of security. It also appeared unnecessary to employ panel trucks with their inherent poor visibility to transport collections which normally total less than 350 pounds. It was these two fundamentals that led to the development of the new vehicle.

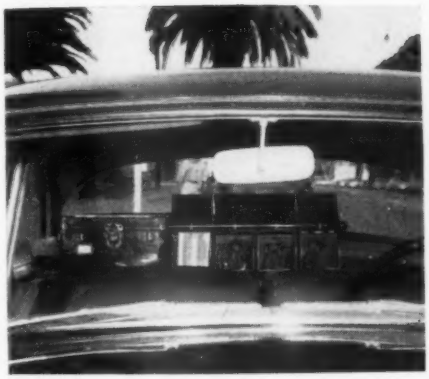
The vehicle used in the new design is the standard business coupe. This model affords the utmost in visibility, low original and operating cost, and when not engaged in collection work can readily be employed as a supervisory, or transportation automobile. This latter feature is especially desirable in small exchanges where paystation collections are made only two or three days each month.

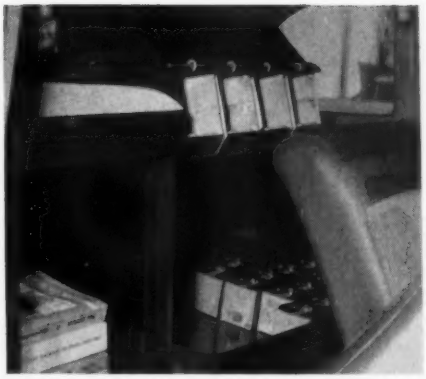
The rear compartment of the coupe is used as a safe—the standard fiber partition being replaced with a metal shield. Through this metal shield project chutes into which full coin receptacles are placed. The coin receptacles remain in the chutes until removed from the rear at the collection center. The chutes extend from immediately above and behind the driver's seat to the rear of the vehicle. The portion projecting through the partition into the forward compartment is four-sided and of moderately heavy sheet metal.

In order to thwart any attempt to remove coin receptacles from the chute, a rocker arm was devised. It is so balanced that the lower end is normally in the down position, preventing the removal of receptacles through the chute entrance. Each chute has a capacity of 15 coin receptacles and is so constructed that the 15th receptacle rests directly under the lower end of the rocker arm, raising it approximately 2 inches. This forces the upper end of the rocker arm down 4 inches, and since a gate is affixed to the upper end, this effectively closes off the chute. This rocker mechanism is enclosed so that it cannot be made inoperative.

The simplicity of this mechanism can be readily seen from the accompanying sketches and photographs. The positioning of the chutes in a business coupe is also illustrated. The number of chutes to be installed in a vehicle depends, of course, upon the number of daily collections anticipated. Without removing the spare tire from the rear compartment, it is possible to install six chutes which would allow collections of up to 90 coin receptacles per day. Removal of the spare tire would permit installation of two additional chutes, increasing the capacity to 120 receptacles.

The chutes and gate mechanism offer as much resistance to tampering as the rear lid of the car and, therefore, require that the vehicle be stolen in order to gain sufficient time to break into the money compartment. This degree of security is considered sufficient, for any vehicle regardless of design or construction can be opened if stolen.



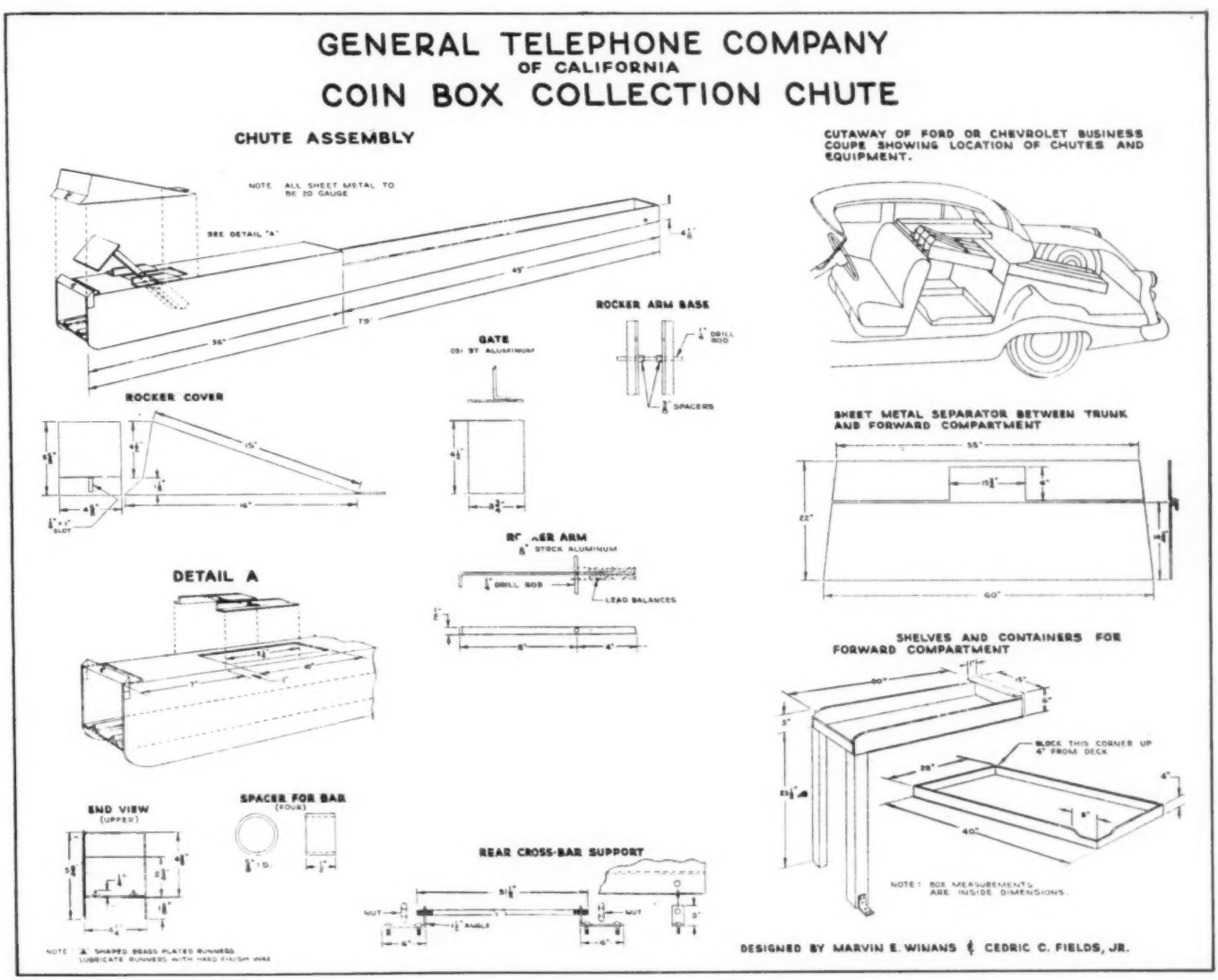


LEFT PHOTO: Openings to coin chutes leading to holders for filled coin receptacles (located in rear trunk of vehicle) as seen from front of vehicle. CENTER PHOTO: Another view of chute openings in vehicle with compartments for storing extra empty sealed coin containers and directories. RIGHT PHOTO: Trunk of vehicle showing filled coin receptacles which have been sent through the chutes.

From the standpoint of efficiency, it is our belief that no arrangement now in use offers the same speed of operation. The collector has no doors to unlock or open in order to deposit coin boxes, but is merely required to drop his collections into a chute and proceed to the next stop. The space beneath the chutes where they extend into the forward compartment provides easily accessible storage for empty sealed containers, telephone directories, etc. Removal of full receptacles from the vehicle upon arrival at the collection center is accomplished quickly, for the angle of the chutes is such that as each receptacle is removed, the remaining receptacles slide to the rear. Experience has convinced us that boxes can thus be transferred to a cart in approximately the same amount of time required to unlock and remove the somewhat cumbersome traycarts employed in connection with some paystation vehicles.

Our study of other special collection vehicles revealed original costs in excess of $3,000 in some cases. Shown below are the items of expense involved in purchasing and equipping a coupe to handle the normal number of daily

(Please turn to page 37)


GENERAL TELEPHONE COMPANY
OF CALIFORNIA
COIN BOX COLLECTION CHUTE
CHUTE ASSEMBLY
NOTE: ALL SHEET METAL TO BE 20 GAUGE
SEE DETAIL "A"
ROCKER ARM BASE
GATE
ROCKER COVER
DETAIL A
ROCKER ARM
STOCK ALUMINUM
DRILL ROD
LEAD BALANCES
END VIEW
(UPPER)
SPACER FOR BAR
REAR CROSS-BAR SUPPORT
CUTAWAY OF FORD OR CHEVROLET BUSINESS COUPE SHOWING LOCATION OF CHUTES AND EQUIPMENT.
SHEET METAL SEPARATOR BETWEEN TRUNK AND FORWARD COMPARTMENT
SHELVES AND CONTAINERS FOR FORWARD COMPARTMENT
BLOCK THIS CORNER UP 4" FROM DECK
NOTE: BOX MEASUREMENTS ARE INSIDE DIMENSIONS.
DESIGNED BY MARVIN E. WINANS & CEDRIC C. FIELDS, JR.

XUM

POWER EQUIPMENT

for Telephone Central Offices

By C. H. ACHENBACH

PART III

DIRECT CURRENT power supply is required for operation of all telephone central office equipment, and is largely used for all types of communication equipment. This direct current is used for both talking and signalling. Forty-eight-volt power is most generally used to supply telephone exchanges, but at times 24-volt is also required. Toll and carrier equipment ofttimes requires different voltages such as 130, 250, etc.

There is a sameness, however, about most of these power supplies. They all use rectifiers or motor-generator sets to convert the alternating current from commercial power into dc current of whatever voltage is required in the telephone exchange. The other parts of the dc power plants consist of batteries for reserve purposes, and alarms, controls, fuse and distribution equipment. Since 48-volt power is most commonly used, it will be discussed more or less in detail. The principles that pertain to 48-volt power plants also apply to power plants of other voltages. However, in the case of higher voltage power plants of 120 and 250 volts or more, it may be more economical to use tubes instead of rectifying discs in the rectifiers. It is assumed that, in discussing 48-volt power plants, the office voltage will be held within the limits of 45-52 volts.

To avoid undue engineering expense and to permit the manufacture of a larger number of similar power plants, it is well to have as few different types as possible to serve the greatest number of different size exchanges. Telephone offices will usually require from one to several additions of telephone equipment to take care of the growth of the towns or cities over a period of years. Thus, the power plant should be so designed that additional equipment can be added to anticipate added drains required to serve new subscribers. The charging equipment should be of one size for each power plant of the smaller and medium-sized exchanges so that you can start with one or more charging units initially and add others later as required.

It is believed that three different sizes of power plants should accommodate most needs. The majority of Independent exchanges will be in small towns and a simple and economical power plant is necessary to serve these small offices, also one arranged for future growth—a medium-sized power plant to take care of small cities of 2,000 or 3,000 population up to 10,000 or 12,000, and a larger sized power plant to take care of the larger cities.

It is believed desirable to standardize these power plants so they can be quickly engineered and manufactured.

The following plan outlines three different capacity 48-volt power plants that should prove adequate to serve all sizes of telephone exchanges.

(1) *Five—Thirty Ampere 48-volt Plant*—Originally this should be a plant of 10 amperes capacity having one rectified. A supplementary power bay can be installed containing one or two additional rectifiers, and another battery can be furnished as necessary to provide a plant having up to 30 amperes capacity. Capacity of the rectifiers should be from three to 12 amperes, and may use selenium discs for rectification. They should be magnetically regulated to within plus or minus 1 per cent between no load and full load and have a drooping voltage characteristic after full load is reached.

The originating bay may be arranged to mount the first rectifier, the ringing machines and the batteries. The first rectifier should have all the charge and discharge fuses, the high-low voltage alarm equipment, and associated lamps, keys, etc. Such a plant should be capable of serving an exchange having from 200 to 1,500 lines. Additional rectifiers can be added to the plant in case the growth of the exchange exceeds the capacity of one rectifier. A moderately simple control circuit can be used which will automatically turn the second and third rectifiers on and off as the office load grows and diminishes. The second and third rectifiers can be less complicated than the first one and need not have such close regulation. Regulation of plus or minus 2 or 3 per cent should be ample in this case.

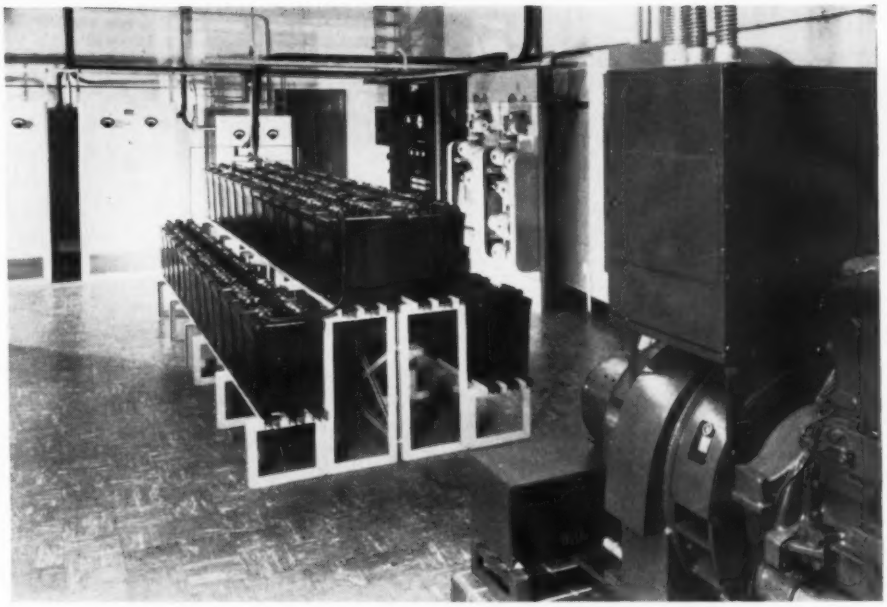
Batteries for plants of this capacity may be high quality automotive types having three cells in one case or container. Twenty-four cells will be required, or eight three-cell units. These batteries should give about eight years of useful life. By making the framework of the power bay of the proper size, 12 cells can be located on each of two shelves. The 100-ampere-hour capacity unit of three cells is about 8 inches wide, 15 inches long and 10 inches high. By using offset hydrometers, the shelves can be located closer together, thus leaving plenty of space for ringing equipment between the rectifier and battery. The mounting framework should be just under 7 feet in height so that it can be moved

through 7 foot doors. The depth should be about 16 inches and the length or width approximately 33 inches.

(2) *Thirty—Two Hundred Ampere 48-Volt Plant.* This plant will be similar in operation to the 5-30—ampere plant. The rectifiers should have a capacity of 25 to 50 amperes with arrangements made so that a number of additional rectifiers can be added to take care of the growth of the office. The originating bay will support one rectifier, ringing equipment and control equipment. The batteries in a plant of 30 amperes capacity or more should use larger and longer life batteries. Since they will be larger and bulkier, it will be necessary to mount them on battery racks alongside the power plant. Twenty-four cells will be required.

The rectifiers may be of the selenium type with the first rectifier having close voltage limits. The regulation may be obtained magnetically or, by the use of saturable reactors, controlled by tubes or thermistors. The additional rectifiers do not need as close regulation as the first one. All rectifiers should have a drooping voltage characteristic after full load is reached. The framework supporting the power plant exclusive of batteries should be approximately 7 feet high and 24 inches wide with a depth of about 16 inches.

(3) *Power Plants Above 200 Amperes Capacity.* Power plants of the larger sizes are expensive, and they are also few in number. The charging equipment will probably vary in size, depending upon the size of the office and its ultimate capacity. In view of this I have no definite recommendations to make since the capacity of the power plant may vary from 200 amperes to several thousand amperes. Many points must be considered in obtaining large power plants, and I will go into only a few of them.



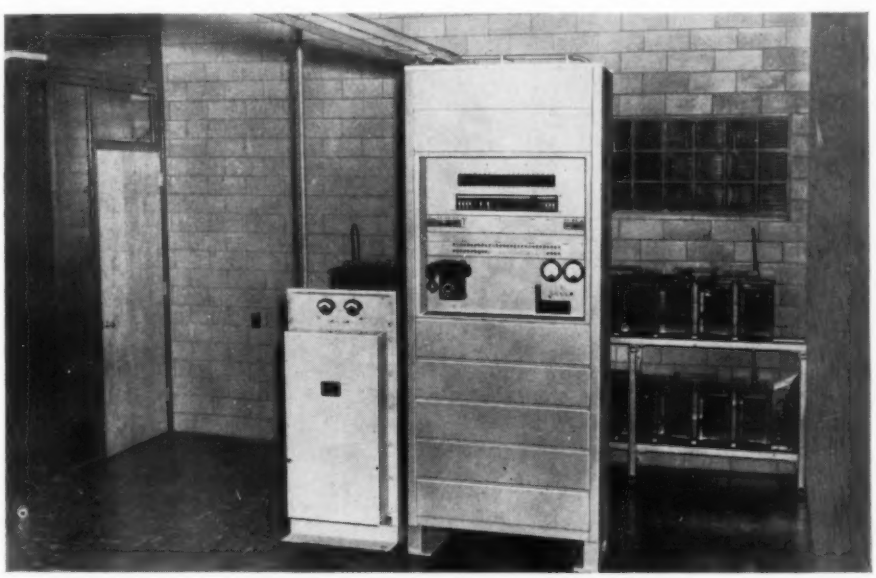
Power room, Durham main office of the Durham (N. C.), Telephone Co. The Durham company is part of the Continental Telephone Co. system. A diesel-driven emergency generator is shown in the foreground. (Photo courtesy of Automatic Electric Co.)

As the size of the power plants becomes larger, a point is reached where the use of emergency cells will be justified. In small and medium-sized plants 24 cells are used in the office battery, but in larger offices emergency cells should be used. In this case, 23 or 24 cells are furnished and used as the office battery, with one or more extra cells furnished and which are cut into or added to the 23 or 24 cells during a failure of commercial power to maintain the office voltage. The emergency cells may be furnished in two groups, each group having two cells, or one group of three cells. With this arrangement the full capacity of the battery can be used in emergencies without the office voltage falling below the lower limit, whereas, without emergency cells, there is still considerable capacity left in the battery when the lower voltage limit is reached.

The emergency cells can be cut in either manually or automatically, but, in either case, the equipment that is required to do this switching, is expensive.

In the Bell System where the upper voltage limit is 50 volts and where 23 cells are used, the point where emergency cells prove in is around 200 amperes. Where an upper voltage limit of 52 volts is permitted, this point will be moved upward. To my knowledge, no study has been made where the upper limit is 52 volts, but it would appear that it would be somewhere between 300 and 500 amperes. In other words, in an office having an ultimate 48-volt load of under, let's say, 400 amperes, no emergency cells would be required. If it is expected that the office load in the ultimate will be above 400 amperes, a cost study should be made to determine whether emergency cells should be installed initially.

As the office becomes larger, a point may be reached where tank batteries will prove in over the jar type batteries. When the capacity of the batteries in the ultimate is under 10,000 amperes, multiple strings of jar type batteries should be furnished. Some telephone operating companies have installed as high as eight strings in parallel giving a capacity of nearly 14,000 amperes.



Crossbar power board, completely enclosed type; Flotrol charger on left; battery and two-tier rack in the background. 100-ampere capacity, covered section includes standby ringing equipment and interrupter and alarm equipment. Installed at Transfer, Pa. (Photo courtesy of Kellogg Switchboard & Supply Co.)

XUM

The large power plants have all the problems of the smaller ones and more. All the components are larger, bus-bars are used in place of cables, etc. The distribution of power to the exchange equipment becomes more of a problem. For years, in the larger size offices, motor generators sets have been used as the charging medium, but within the last few years some larger-sized rectifiers have been built that almost compete in first cost with MG sets.

In determining whether rectifiers or motor generator sets are to be used, several factors should be considered, such as efficiency, floor space, maintenance, etc.

In the very large offices having a number of charging units, the use of bus duct should be considered. This will cut down on congestion due to the large number of conduit runs required and, in many cases, will be cheaper in first cost. For offices where the ultimate drain on the power plant will be 2,000 amperes or less, braided covered cables should be used for the charge and discharge leads. For larger offices bus-bars will be more economical than cables. Either copper or aluminum bus-bars may be used without much difference in costs. There is one factor why the use of copper should be considered over aluminum. When bolted or clamped joints are used in places which become heated during the busy hours, and cool off during the non-busy hours, there is an expansion and contraction of the metal parts. This may permit some aid to reach the contact areas of the bus-bars, permitting oxidation. This oxidation increases the resistance of the contacts, causing greater heat, and the progressive oxidation of the joint. Copper has been found to be superior to aluminum for connection in heated areas. When copper was difficult to obtain shortly after World War II, aluminum bus-bars were used for all except hot connections.

Twenty years ago motor generator sets were widely used for charging batteries and supplying the office load. Rectifiers furnished at that time were small and unregulated. There were in existence, however, some large mercury arc rectifiers, but these have largely disappeared from the picture. Vacuum tubes would only produce an ampere or so of current and gas filled tubes around 10 or 15 amperes. Copper oxide discs were used in small rectifiers to provide rectification of the ac supply into dc. About 15 years ago the use of selenium discs began to come into the picture for use in rectifiers. The selenium discs were lighter in weight and would stand higher inverse voltages, making their use more attractive than copper oxide discs or tubes. Development work on controlling the output voltage of disc type rectifiers was carried on, and a number of different methods have been perfected. Manufacturers of selenium rectifying discs have been constantly making them in larger capacities and increasing the inverse voltages that they can stand. So, today, we find selenium rectifiers being built in large capacities.

In this installation, at the Hanover exchange of the Indiana Telephone Corp., the Sub-Cycle is located on the front of the power panel. This office uses superimposed ringing. A standby dc operated vibrator is mounted on the rear of the power panel directly behind the Sub-Cycle generator. In this case the available space below the power panel was not needed. In small offices it is possible to mount the charger directly below the power panel. The power panel has a built-in wire chief's test set. (Photo courtesy of Leich Sales Corp.)

Research laboratories are experimenting with new metals and semiconductors for rectifying ac power, and some of them show great promise. The use of germanium as a rectifying medium has been undergoing tests and developments for several years. The discs are exceptionally efficient and will stand a higher inverse voltage than copper oxide or selenium discs. In a 48-volt rectifier only one disc is needed, instead of two or three in series when using selenium. It takes a selenium disc of rather large size, approximately 25 square inches, to safely carry eight or 10 amperes. A germanium disc about the size of a dime will carry almost as much current, and if cooled by a fan, it will carry 100 amperes, and if water cooled, about 1,000 amperes. The only drawback to the use of germanium is its inability to stand high temperatures.

Selenium discs can stand a temperature of about 75 degrees C., whereas germanium discs should not be used at temperatures in excess of 65 degrees C. Since the temperatures in telephone exchanges often reach 40 to 45 degrees, it does not allow for very much of a temperature rise. Undoubtedly, germanium type rectifiers will appear on the market in the near future, and they will be a worthwhile addition to the list of power charging equipment.

Some research work has been done on the use of silicon as a rectifying medium, and it shows great promise. It is not quite as efficient as germanium, but it will stand exceedingly high temperatures. At the moment it appears that it may be the rectifying medium of the future.

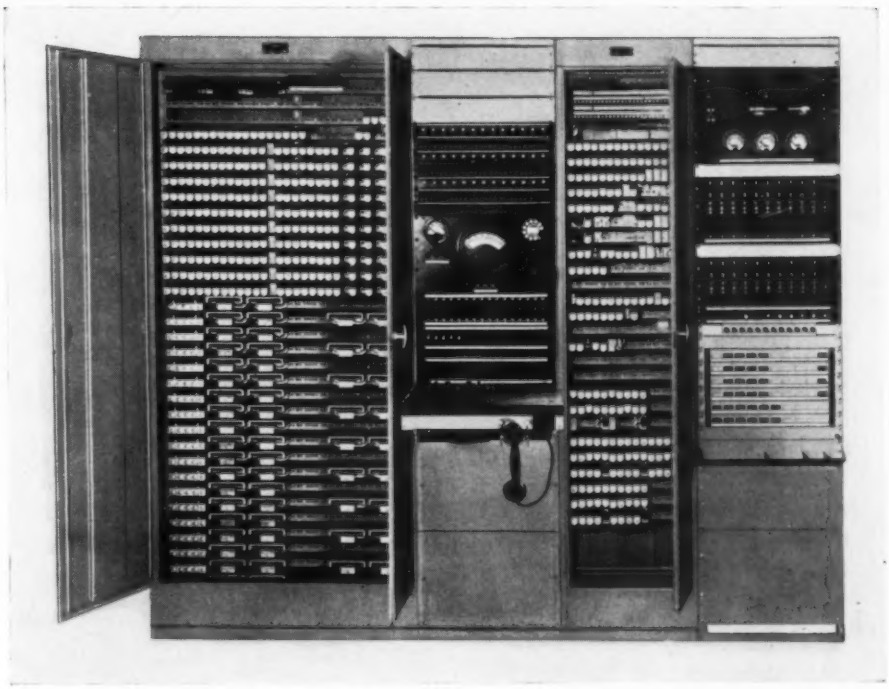
Choose your rectifiers with care, since you want them to last the lifetime of the office. All parts of a rectifier should be conservatively rated, especially switches, contactors and other current carrying devices. It is unwise to use a switch rated by a manufacturer as having a current carrying capacity of 100 amperes at its full capacity over a period of years. You are inviting trouble if you use a 100-ampere switch to carry more than 60 or 70 amperes continuously over long periods of time. Rectifying discs should be derated both from a voltage and current standpoint. So choose a supplier whose product is conservatively designed. It may cost somewhat more than another article of inferior design, but over a period of years it pays to buy the superior product.

It was mentioned under the different sized power plants that a rectifier should have good voltage regulation and a drooping characteristic in the voltage output after full load is reached. The voltage regulation should be plus or minus 1 per cent, or better, under all conditions of line voltage and load. Good voltage regulation will prolong the life of batteries and lessen the cost of maintaining them. The drooping characteristic is needed to prevent the overloading of the rectifier when power has been restored after a power failure. The more conservatively a recti-

fier has been designed, the less this droop need be. In any case, a rectifier whose voltage is set at 51.85 volts for floating the battery, should not overload enough to harm the rectifier at 48 volts output with high line voltage.

In a previous article on batteries it was stated that the float voltage of batteries should be not less than 2.16 volts per cell. For 24 cells, this will give you a nominal or average voltage of 51.85 volts. A float alarm should be provided that will give an alarm whenever the voltage goes outside the limits of 51.25 and 52.75 volts. Charging equipment can be automatically cut into or out of service in several ways. The high contacts on an ammeter relay can be used to cut rectifiers into service and they can be shut down or taken out of service when the low contacts of the ammeter relay are closed. It is also possible to remove a rectifier from service by utilizing both the low contacts on the ammeter relay and the high contacts on the voltmeter relay which is set to give a high float alarm. When there are several rectifiers used in a power plant, the circuit for removing rectifiers from service should be so arranged that only one rectifier at a time must be removed. This can be accomplished by making it necessary for both the low contact on the ammeter relay and the high contact on the voltmeter relay to be closed before a rectifier is removed from service.

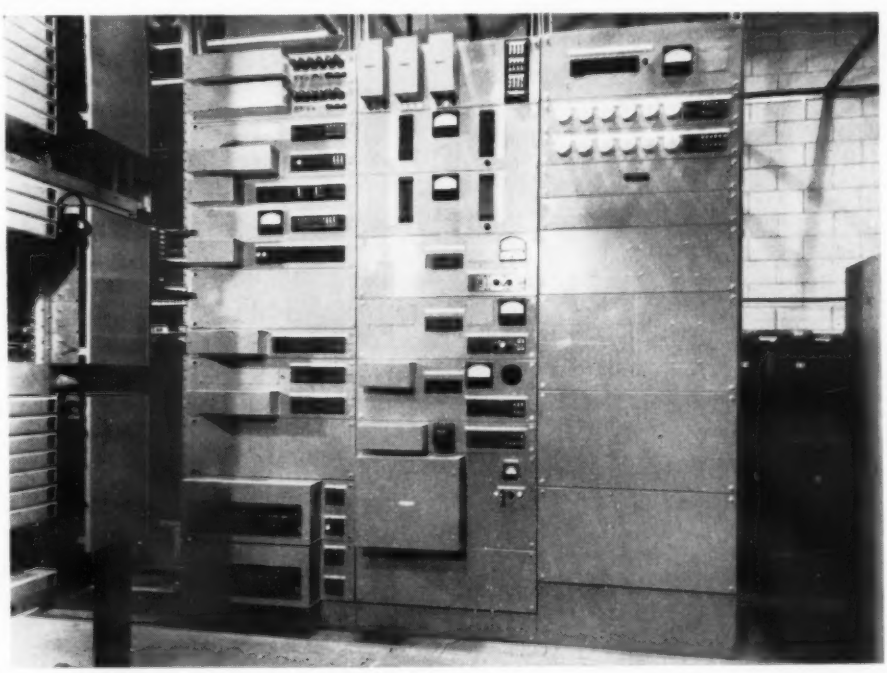
Another method of cutting charging equipment into or out of service is to bridge a relay around a shunt in the main discharge lead with a rheostat or potentiometer to adjust for the proper setting for starting a rectifier or charging unit. To remove from service, use the high contacts of a voltmeter relay. With this method, a time delay circuit will be required to permit the stopping of only one rectifier at a time. Without this time delay circuit, all the rectifiers would be removed from service when the high contact of the voltmeter relay is closed. This would permit a pumping action to take place and rectifiers would be continuously cut into and removed from service.



At the right are shown three panels of a power bay for central exchange automatic switching equipment of 1000-line capacity—300 equipped—which includes the following: Power metering unit, main fuse, distribution fusing, supervision lamps, traffic metering unit, trunking and miscellaneous equipment and toll line local test panel and associated equipment. The ringing machine is mounted on the back of the first panel and in smaller installations a battery eliminator would be included. (Photo, courtesy of North Electric Mfg. Co.)

In the three plants mentioned no consideration has been given to the use of countercells. Countercells have in the past been furnished when batteries were overcharged to prevent the office voltage from going too high. It is believed that if the batteries are properly floated, no overcharging is necessary. The use of one or more countercells might be justified to avoid the use of emergency cells. Thus, a 25-cell battery could be used with one countercell in the circuit at all times except during power failure, when it would be automatically removed from the circuit. This would permit the battery to be discharged to 1.80 volts per cell instead of 1.87 volts per cell before the office voltage would fall below the minimum of 45 volts. The use of 26 cells with two countercells in series would permit the battery to be fully discharged before the lower voltage limits of the office are reached.

(The End)



Photograph shows power board of the automatic exchange of the Lufkin Telephone Co. at Conroe, Tex. First section on left hand: Interrupter controls; ringing control; common supervisory, and tone. Second Section: End cell switch; voltage control; discharge; battery charger transfer control, and battery distribution. Third Section: PBX battery and ringing current distribution. (Photo courtesy of Stromberg-Carlson Co.)

V V

"When the federal bureaucracy begins in any field, it never seems to end. We are struggling now to cut down the size of this bureaucracy. . . ."—HERBERT HOOVER, *former President of the United States.*

XUM

The OPERATOR'S CORNER

by MAYME WORKMAN, Traffic Editor

IT IS ALWAYS a pleasure to learn of the kindly and helpful action of a switchboard operator. A grateful subscriber in Milwaukee, Wis., asked the *Milwaukee Journal* to print the following article in their "From the People" column:

"Hats off to the telephone company and may God bless that dear operator in Milwaukee. My son, Sgt. Harry Garwood, who just arrived in Milwaukee after 17 months in Korea, tried to call me on the telephone here in Sister Bay on Dec. 27 in the afternoon. Due to some defect in the telephone, the message did not come through, but I did learn that he was in Milwaukee. It occurred to me that I might be able to reach him at one of the two hotels we stop at when in town. So I called the Abbot Crest and the Pfister, but he was not at either one of them.

"In desperation, I asked the operator if she had any idea how I could locate him. She said that this would be difficult in a city the size of Milwaukee but she would see what could be done.

"In not longer than 15 minutes, the telephone rang and Harry was on the wire. She had found him at the YMCA."

Here is a true example of initiative, friendly interest, and a spirit of helpfulness on the part of a switchboard operator. It is an experience that will always be kindly remembered on the part of the mother and her son to whom this telephone call meant so much. To hear her son's voice after 17 months absence from home surely made his mother very happy and, the son, hearing his mother's voice, was thrilled to be back in the good U.S.A. where he would soon be with his loved ones again.

Another grateful customer in Milwaukee expressed her appreciation to a helpful operator, via the *Milwaukee Journal,* when she was injured on Christmas day. The customer stated: "On Dec. 25 I was injured in a fall at my front door. Alone, dazed and bleeding badly, I got into the house and dialed the telephone operator, telling what had happened. Immediately, she started the ball rolling.

"In less time than it takes to write this letter she had called a neighbor and asked her to come to my house. The squad car and ambulance rushed to my door. I was taken to Johnston Emergency Hospital, where the doctor and nurses quietly and efficiently took over.

"I am indeed amazed and grateful for all the help given me. And especially I wish to mention the telephone operator who helped me so much."

Perhaps this customer, like many others, had read the ad "Help is as near as your telephone," never realizing how true this statement is. The help of the telephone and the operators at the switchboard in one case of emergency, particularly where a human life is involved, is more precious and valuable than the cost of telephone service for a lifetime.

"How would you like to trade your job at the telephone company . . . for my job . . . just for one day?"

It has often been said that the operator at the switchboard has the world at her fingertips, and this is true, particularly in this era when distance has been conquered. This recalls a little verse about the switchboard operator:

Telephone Girl

The world is at her fingertips
  Her switchboard is a loom
On which her nimble fingers make
  A tapestry to bloom.

She likes great cities, business plants,
  And people far and near,
This unseen friend who serves us well
  And shares each smile and tear.

Each day ten million lonely hearts
  Find comfort in her tone
She even joins your home with mine,
  This lady of the phone.

Isn't it just wonderful to be a telephone operator and be able to do so many nice things for so many people?

Traffic Questions

(1) If a called party is expected today or it is not known whether he will be there today, should word be left at the called station?

(2) On the first report concerning the called party, should the operator ask, "Will you talk with anyone else?" if the calling party does not volunteer further directions?

(3) If the called party is expected on a future day or it is not known when he will be there, but it will not be today, should the operator ask the calling party when he wishes the call tried?

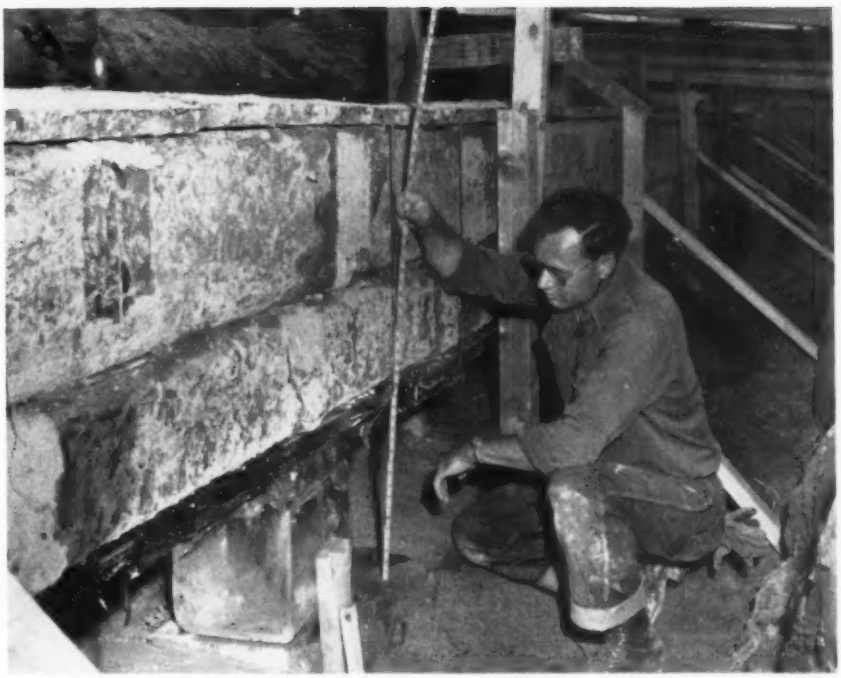
(4) How should the operator proceed if the called party is not expected at any future time?

(5) Should the "subsequent attempt" time always be entered on the ticket?

Answers are presented on page 43.

By ***HAROLD B. McKAY***

Blocks of ice used to lower 160 feet of cable duct as a unit to eliminate breakage



This photo shows how cable duct run was uniformly lowered into a new location, by supporting it on blocks of ice, which gradually melted. Here a workman notes that the duct has 15 inches left to go (Photo courtesy of Pacific Telephone & Telegraph Co.)

ICE solves construction problem

TELEPHONE construction men are among the most resourceful people in the world, and they never cease to amaze others with their ability to do unusual jobs.

This was demonstrated on a recent job in Olympia, Wash. A regrading job on the city street was planned, which would lower the roadway surface to a point where it would be dangerously close to the telephone cable plant which was under the ground at this point.

The problem was to lower the cable duct in proportion to the amount that the street was to be lowered. The trick in the problem was that the cable was in a clay tile duct system, which of course is not flexible by any means. Unless the entire duct run could be lowered as a unit, the cemented joints would open up and the tile would crack. The run was 160 feet long, and no ordinary hoisting apparatus could handle the duct run with sufficient precision to keep it from breaking.

That was where resourcefulness paid off. The telephone men dug a trench to a depth below the existing level of the duct, then passed wires beneath the run. A set of wooden guide frames was built along the sides of the duct, and the wires fastened as slings to these supports. The earth was then dug out from under the cable duct run.

The next step was to obtain a half-ton of ice, which was sawed into blocks of the correct size to fit in the space under the cable run. When the ice was in place, the supporting wires were cut, permitting the weight of the ducts to rest on the ice. This done, there was nothing left to do but to wait and let things take a natural course.

H. B. McKAY

Gradually—very gradually—the ice melted. Slowly the cable run settled into its new location. Actually it took 51 hours for all of that ice to melt, but when the thaw was complete, the job was all done except for filling up the hole. The cables and ducts were in place, snug and undamaged.

This unusual operation was made the subject of a bill insert by the management of Pacific Telephone & Telegraph Co. whose workmen did the job. The insert contained photos of the job in progress and was entitled "Ice Pack Eases Construction Headache."

V V

"A dime out of every tax dollar goes to pay interest charges alone (low interest, too) on the national debt. Maybe some of the rank and file folk—as well as Treasury officials and a few others—ought to worry a bit about that debt, and what it means to all of us as a bounden obligation and inflationary influence."—El Dorado, (Kan.) TIMES.

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MERCHANDISING Given Emphasis At Nebraska Convention

By DAN S. FARGO

THE FIRST VOTE of confidence in the 55th Nebraska Telephone Association convention was recorded when, to be present, 370 people (a new high) braved weather difficulties ranging from ice-covered roads to very low ceilings for air travel. Then, after all had reached Lincoln for the Mar. 22 and 23 meeting at the Cornhusker Hotel, the vote of confidence in the program was reconfirmed by the enthusiasm with which the speakers were applauded and by the numbers in attendance at the sessions.

The Nebraska association Convention Committee, according to James L. Morrison, association secretary-treasurer, has been experimenting the last three years to try to find the best possible program. They have found that several outstanding speakers from outside the telephone industry can add much of worth to a telephone convention program—especially since they are almost always able to make what they say pertinent to the telephone industry.

For example, in this convention, an educator pointed out the telephone industry's stake in improved education; and a board chairman from Omaha demonstrated a telephone company's interest in having additional industries locate in its exchange area.

The association president, J. W. Hudson of Aurora, called the convention to order. Following an invocation, Merle M. Hale of Lincoln, extended a "Welcome to Lincoln." In his remarks he observed that 1954 had been one of the best years in telephone company history.

During a talk on "Increasing Revenues and Customer Relations Through Merchandising," John C. Ahlstrand, general commercial manager, Northwestern Bell Telephone Co., said that, by and large, people in the telephone industry operate successful, well-managed businesses, but let's not forget that we are still very much in competition with others for the buyer's dollar.

He went on to say:

"For more years than we like to admit, we've been way behind demand because of lack of facilities. Now we are up against new and different merchandising techniques. For example—television, air conditioning—color is king and gadgeting is a craze. Don't forget we're in competition with metal storm windows, television sets, automobiles, refrigerators and dishwashers.

"Others are simplifying operation of their products — the auto makers are turning out cars with power brakes and power steering, electric window lifts, automatic gear shifts so that mama has less and less to do. The appliance people give the housewife a dishwasher which will do all the washing and drying with the turn of a switch—and a stove that will cook at any desired temperature by the turn of a dial and the push of a button."

That's the problem—meet and beat the competition. To do it, one has to have good attractive products and services properly priced to persuade the customer to buy, Mr. Ahlstrand said. He continued:

"You run your business—you are management and if you accept this concept, you become a merchandiser.

"As a merchandiser, here are some questions to ask yourself:

"Are my services the best I can provide?

"Do they satisfy the requirements of the customer?

"Are they priced so I can sell and make a profit?

"Am I working my market as hard as I should?

"Am I anticipating future needs and requirements?

". . . The best, simplest and most effective sales program is this:

"Know what you have to sell.

Part of the new board of directors (left to right): JAMES L. MORRISON, secretary-treasurer JOHN AHLSTRAND of Omaha; PAT J. CAREY of Petersburg, newly-elected vice president; W. K. FLAMING of Elsie; K. L. LAWSON of Lincoln; C. E. THOMPSON of Dunning, and J. W. HUDSON of Aurora, outgoing president and ex-officio member. Directors not present for the photo are: EARLE B. BLOMEYER of Columbus; OTTO FUERST of Scottsbluff; VERNON BELLOWS of Blair, newly-elected president; and H. D. THOMPSON of Wisner.

"Tell everyone working with you.

"Tell your customers, and then—

"Ask them to buy."

Mr. Ahlstrand listed among the more promising sales opportunities, the following:

"First of all, your basic service for business and residence customers. Are you sure there are no prospects left? Have you seen everyone in the territory you serve, who now because of better conditions might take service, even though once before he turned you down. . . .

"You might say, 'My plant is already working to capacity and there is no space to grow.' I suggest you take

Left Photo: In display room are, from left: C. J. MIELAK, L. M. JOHNSON, M. P. SCHARNWEBER, all of Columbus, Neb.; J. G. RICHARDS of Alma, Neb., and WILLIAM C. STREHL of Lawrenceville, Ill. Right Photo: Registering are (left to right): G. W. MINER of Topeka, Kan.; FLOYD REYHER of Haxton, Colo., and DARRELL AMMERMAN of Lodge Pole, Neb.

another good look at your central office equipment and your outside plant as well. A check of cable records often reveals a pair that can be used to good advantage. . . .

"To further develop the sales possibilities of extensions, consider this: Less than 10 per cent of families have a second telephone. A higher percentage have a second automobile, so it really isn't a question of whether a family can afford an additional 75 cents or a dollar a month. It could be a question of whether they can afford any service at all unless it is located at really convenient spots. A convenient location develops usage and usage develops indispensability—and no one will give up his service if it's indispensable.

"Those of you who have raised families know from your own experience the usage made by teen-agers. Couldn't there be many a prospect in your town for a second residence line? Try the families with two cars and teen-agers.

"Remember, too, that with two working lines there is immediately a prospect for key switching equipment.

"Saving disconnects is another productive sales venture. Follow up on those 'out' orders and get the customer to keep his service. It's been said that you have to connect three or four stations to gain one net. Here you have one connected and working. Get to him and you'll save money and effort if you sell. . . .

"Something to think about also is applying for permission to waive the extension installation charge when one is installed at the same time as the primary service; also, waiving the installation charges on the second, third, fourth extensions if installed at the time of the first extension.

"We have received approval for such tariff changes and, by being alert at the time of customer application, we have increased the percentage of extensions sold on the original order from 2½ per cent to 5 per cent. . . .

"I understand there will be about 20 dial conversions of Independent exchanges in the next 12 months in Nebraska. Every one of those offers sales possibilities. Customers invariably are interested in your project of bringing them the latest modern service. They are receptive for new ideas and more adequate service."

In summarizing, Mr. Ahlstrand said there are many opportunities to sell after one gains the merchandising concept, which means creating customers. And, he said, selling will improve relations with customers.

In this group are (from left): JACK WHITE of Lincoln; JAMES PIERCE of Sargent, Neb.; DICK FRIEHE of Chicago; WILLIAM C. SCHRECK of Bertrand, Neb.; NEIL SHRECK of Bertrand; PAUL BARNES of Chicago; CARL GRUHN and WILLIAM HILL of Keystone, Neb.

Robert M. Armstrong, executive director, Nebraska Citizens Council, Lincoln, spoke next on "Personal Property and Franchise Taxes." He discussed three bills then before the Nebraska Legislature. They were the "basic value" bill; the average inventory bill, and a bill to change the tax assessment date from Mar. 10 to Mar. 1.

Mr. Armstrong detailed the background on the basic value bill, tracing previous concepts of "value," and stated that the new bill would empower the assessor to determine basic value by considering the following five factors:

(1) Location.
(2) Desirability.
(3) Productive and earning capacity.
(4) Cost of reproduction and depreciation.
(5) Comparison with other property that has a known and recognized value.

The governor of Nebraska, Victor E. Anderson, gave a short address in which he stated he has dedicated himself to close scrutiny of all proposals for additional services to be furnished by the state because he realizes that any new services often remain even after the pressing need is gone, due to the political difficulty of cutting back on the services. A glaring example at the federal level which he cited was the fact that there are more people working on (American) Indian affairs than there are Indians.

"Is Education Business' Business?" was the question posed and capably answered by Dr. Leland Forrest, chancellor, Nebraska Wesleyan University, Lincoln. He stated that one of the misconceptions held by lay people is that only the professional educators should be interested in educational

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processes and methods. Dr. Forrest's conclusion: Education is business' business. And, he added, it has been pretty conclusively demonstrated that where the level of a people's education rises, the economic level also rises.

Dr. Forrest claimed that a recent survey indicated that if all those Americans with less than an eighth grade education (who could normally be expected to have reached this grade on the basis of age) could be educated to the eighth grade level, then retail sales in the U. S. would increase equivalent to all U. S. foreign trade combined.

On the topic "Requirements and Procedures for REA Telephone Loans," E. C. Weitzell, chief, telephone operations and loans division of REA, stated that it is generally agreed that the Independents must convert to dial if they are to provide the service which their subscribers are demanding and have a right to expect. Developments in the nation's telephone service make modernization a must, he said. He added:

"In order to do this, many of the smaller companies will be forced to consolidate and to integrate their systems with adjoining and surrounding companies. They will need to do this in order to be able to afford the high investments that are currently necessary in order to establish modern dial telephone service.

"The Independents must develop leadership, they must improve their management, establish adequate records and accounting, and they must obtain rates which will justify the investments that modern telephone service requires.

"If the Independent industry is to survive, it must be in position to provide a service that is equal to any other service being provided in the nation."

Mr. Weitzell outlined the procedure to be followed in obtaining an REA loan. In the matter of equity requirements, he said, this "will normally vary between 10 per cent and 15 per cent of your pro forma assets, depending on the characteristics of the particular operation."

A. V. Sorenson, chairman of the board, Midwest Equipment Co., Omaha, expanded the theme that all Nebraskans have the responsibility to develop sufficient opportunity in their home towns to keep the younger generation from departing for Detroit, Los Angeles, Houston, etc., looking for opportunity in earning a livelihood. He warned that the business of attracting industry to a particular town or state, in order to stabilize income and hold the young people, has become a highly competitive activity. As was mentioned earlier, Mr. Sorenson pointed out that persuading a new company to locate in a given Independent's exchange area will almost certainly result in increased local and toll revenues.

Viewing the Small Company Assistance Committee display are (left to right): RALPH HECKER (sitting) of Elgin, Neb.; B. E. BOEHM of Omaha; FLOYD SCHULTZ of St. Edward; M. K. JAMES of North Platte, Neb.; A. J. BURKHART and VERNON A. ALLAN, both of Scottsbluff, Neb.

He explained that the line between attracting business to a town and not doing so is a fine line—it depends on local enthusiasm, community spirit, alertness to opportunity.

Mr. Sorenson also counseled, "It's one thing to attract new industries into a town, but it's another—and just as important—to hold the old."

There followed a motion picture, "It's Everybody's Business," an excellent exposition of free enterprise and how it works, presented through the courtesy of the U. S. Chamber of Commerce.

Leading off the second day's session was Mr. Hudson's president's report. He discussed the minimum wage legislation now before Congress and in connection noted that it behooves Independent companies to convert to dial as swiftly as possible.

He cited the success of the association's accounting school, held in Kearney, and attended by 25 people from 22 companies.

BOB SPINHARNEY shows a splicing case to MR. and MRS. HARLIN MOOTHART of Chapman, Neb.

Mr. Hudson reminded the convention that the Nebraska association offers advertising mats at cost; also it is glad to prepare news releases if the facts are forwarded to the association office.

Future plans, he said, include sponsoring a management clinic, and achievement awards for telephone people.

Mr. Morrison's secretary-treasurer's report deemed the association to be sound financially. Mr. Morrison also mentioned the pending federal legislation in regard to minimum wages. The expected increase is likely to be from the present 75 cents an hour to at least 90 cents, he said.

In regard to unemployment compensation benefits, he stated coverage is likely to be extended from companies with eight employes to include those with four.

At the state level, Mr. Morrison said Nebraskans could expect consideration of legislation relating to the following taxes—sales, use, and corporate and personal income.

Vernon Allan, Scottsbluff, presented the assistance committee report which brought out the fact that in 1954 there were 21 Nebraska Independent companies which gained rate increases or had rates established due in varying degrees to the aid of the committee. So far in 1955 there are six companies in this category, he said.

The public relations committee report was given by A. B. Gorman, Lincoln. He warned:

"Much has been written and said recently to indicate that competition for the consumer's dollar can be expected to sharpen this year even above experience in the recent years of good business. This points up a need for

(Please turn to page 40)

THE PLANT MAN'S Notebook

by Ray Blain, Technical Editor

IT IS OUR honest opinion that eventually all exchange *lead-covered* cable systems will be maintained under constant gas or dry air pressure. This will not only reduce the cost of cable maintenance, but will also extend cable life from 10 to 15 years.

In certain exchanges, compressor dehydrators are being installed and pipes extended directly from the air tank to the cable sheath in the central office vault. This air has its moisture content extracted chemically. Various safety and alarm features are provided that indicate high and low pressure, excessive moisture content of the air, etc.

Actually, this idea is not new as it has been used in certain areas down through the years. It is just that of late the numerous advantages of maintaining exchange cable systems under constant pressure have been realized. When your writer visited the old manual exchange of the Shanghai (China) Mutual Telephone Co. back in 1926, they were using a similar arrangement. In this particular instance, a compressor was installed in the basement of the exchange near the main frame, and pipes equipped with valves were connected directly to the sheath of the different cables in the vault. This cable was not maintained under constant pressure, but the air was applied only as required to locate trouble or dry out wet cables.

• • •

We are in receipt of a letter from Stuart H. Kelley, of the Northwestern Bell Telephone Co., Omaha, Neb., in which he makes the following statement that pleases us very much:

"For lo many a year I have read with much pleasure and some profit the sometimes wise, sometimes inspiring, sometimes whimsical, but always interesting paragraphs of your Plant Man's Notebook in the idea-barter-counter of TELEPHONY."

Mr. Kelley states further that he approves of our idea that advertisers should show their telephone numbers, also, the personal pocket telephone directory lists.

• • •

The recently developed loud speaker type telephone will unquestionably prove popular for use in many locations. To answer a call, the user merely depresses the ON button mounted on the instrument's base. A volume control knob is used to adjust the output on a separate loudspeaker. When he hangs up, he merely operates the OFF button.

While talking, the user may walk about the room if he so desires. A small microphone mounted in the base of the instrument will pick up the voice from a reasonable distance. Several people may share a conversation when desired.

When privacy is desired, the telephone may be used in a conventional manner without adjustment. The change from handset to speaker-and-mike, or vice versa, can be made at any time by merely operating the buttons.

It is understood that some of the Bell operating companies are now furnishing this instrument at a rental of $6.00 a month, plus installation charge. This is in addition to the regular monthly charge for the class of service furnished.

• • •

We recently enjoyed a talk given in Washington, D. C., by Mr. Frederick B. Lee, Administrator of the Civil Aeronautics Administration, titled: "C.A.A. and Aviation Communications."

Congested airways traveled by jet aircraft with speeds of 600 miles an hour, commercial airliners of 300 miles per hour, and helicopters of 80 miles per hour, present a real traffic control problem to communicators.

We were surprised also to learn that C.A.A. has about 179,000 miles of landline teletypewriter circuits and over 70,000 miles of voice circuits operating in this country.

• • •

According to *Scientific American*, back in March, 1904, "In some sections of the state of Mississippi the people, it is reported, have pulled down a number of miles of telegraph wires because some learned ignoramus had demonstrated to them that the long drouth in these regions was caused by these wires carrying off the lightning, which used to bring rains."

• • •

It has been said that between the great things that we cannot do and the small things we will not do, the danger is that we shall do nothing.

• • •

Our long time friend, P. M. Schuchart, of the Florida Railroad and Public Utilities Commission, gives us some interesting information on communications from the fastest growing state in the union.

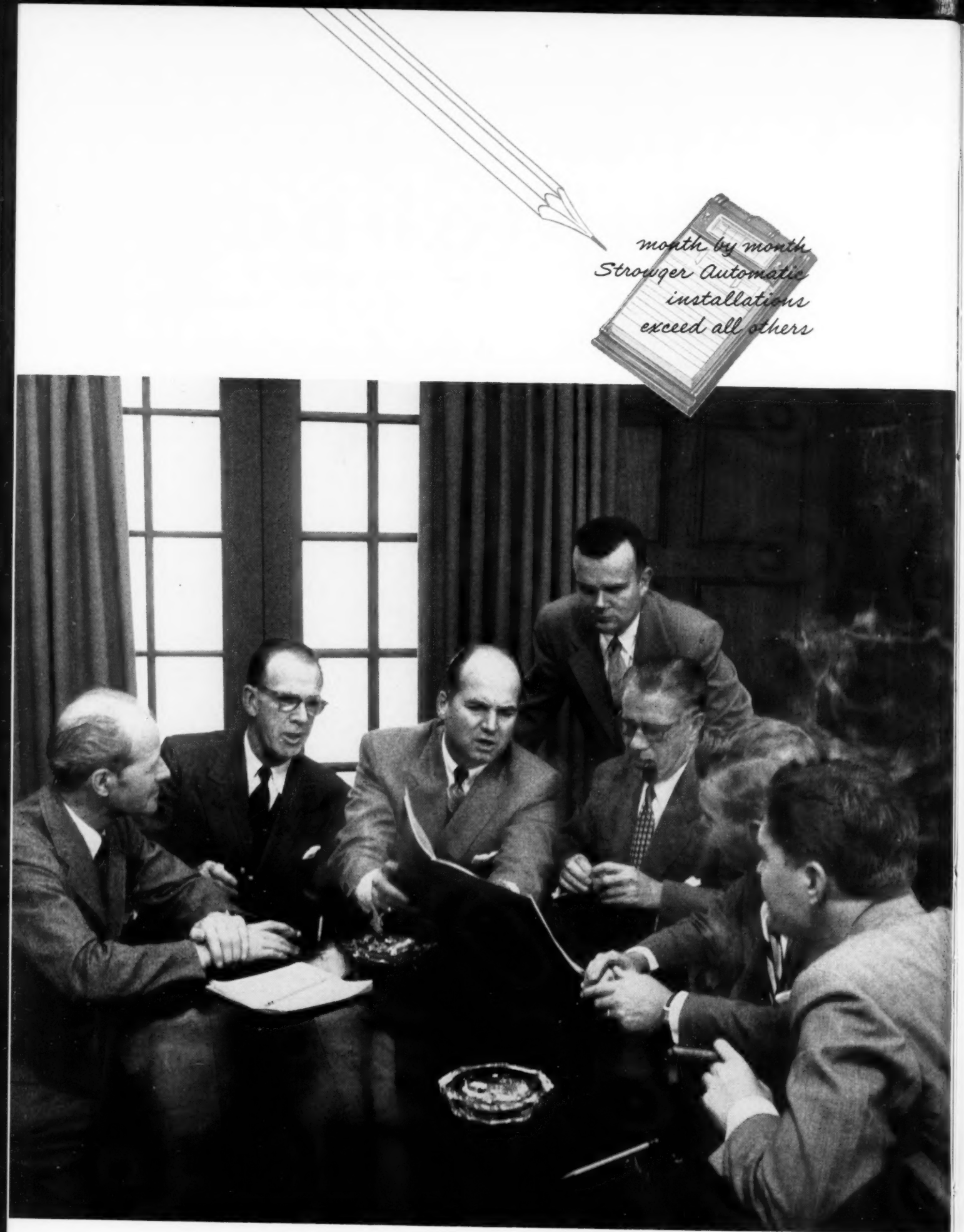
During 1954, Florida had a net station gain of about 100,000 and reduced the held orders less than 25,000. Further, it is the considered opinion that by the end of 1955 they will still have not many less than 40,000 held orders.

Certainly no one can deny that the telephone business is booming in the land of sunshine and flowers!

• • •

It is a sad although true fact that many new buildings now being constructed are not provided with an adequate number of telephone outlets. In our opinion, this is not only false economy, but the appearance of rooms may also be marred later by the installation of exposed wiring.

It would appear desirable to provide a telephone outlet and concealed conduit in all rooms of every new building constructed. This applies to residence and office buildings alike.


month by month
Stronger Automatic
installations
exceed all others

XUM

Records prove that when a telephone company standardizes on Stowger Automatic, that company normally begins a new, successful, prosperous era. Here are a few of the reasons why.

Hour of Decision

—success in the making!

Debate on future equipment needs may run hot and heavy—yet, in the end, most telephone companies will decide on Strowger Automatic! In choosing Strowger, they are making a definite move toward future success and prosperity, because Strowger is *best suited for modern needs.* Here are a few of the reasons this is so—reasons why Strowger Automatic is called "the world's most *modern* exchange":

1. *Unlimited Service Features:* Supremely flexible in its adaptability to new services, Strowger is ideal for meeting rapidly changing needs. As each new requirement arises, Strowger exchanges are readily changed to meet it—and new Strowger equipment is designed to include it.

2. *Low-cost Maintenance:* Strowger Automatic beats today's high labor costs. Simple operation, simple circuits insure most efficient use of maintenance personnel.

3. *Maximum Expansibility:* Today's booming housing and business growth are being met easily in Strowger Automatic areas by simply adding switches, shelves and frames.

4. *Fastest Local Switching:* Modern heavy telephone usage demands fast switching for equipment economy. With Strowger Automatic, the ringing cycle *starts immediately* when dial stops after last digit—nothing could be faster!

Men who own Strowger Automatic say it is unequalled for long life, unequalled for fine modern service. For full details and helpful consultation, write *Automatic Electric Sales Corporation, 1033 W. Van Buren St., Chicago 7. Or, call HAymarket 1-4300.*

Why Gamble?

AUTOMATIC ELECTRIC

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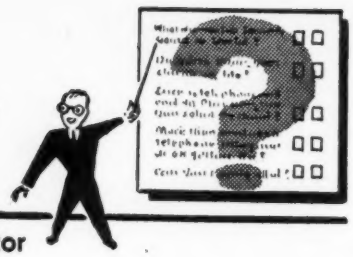
PLANT MAN'S QUIZ



by RAY BLAIN, Technical Editor

Q. Will it be possible to make use of a platform in the splicing or repairing of the new rural distribution cable?

A. The wire messenger used on this cable was never intended to support the weight of a man in a cable car or on a cable platform. Neither should a ladder be leaned against a span of this type cable.

In general, connecting taps or splicing can be performed at poles. When necessary to perform maintenance work in the span, the cable can usually be lowered to a convenient working height by unclamping the support wire at the poles adjacent to the span and lowering the cable.

• • •

Q. We are wondering what type of point is considered best when using a pipe pusher to place a length of pipe, which is to be used as a telephone conduit, under a street?

A. Manufacturers of pipe pushers usually recommend that a pipe cap or a reducer coupling with a plug be placed on the front end of the pipe. This is used rather than a pointed leader as the square nose of the plug will tend to push aside obstacles, while a pointed leader might be deflected, sending the pipe in a direction other than the one intended.

• • •

Q. When a power driven tool is used to make wire-wrap connections on a switchboard, can you tell us whether it must be air-driven?

A. These tools may be powered either pneumatically or electrically. The power turns the wrapping bit within the sleeve to make the connections uniformly tight.

• • •

Q. How often should a lead-calcium type storage battery receive an equalizing charge when used on a dial telephone system?

A. The latest information that we have from one manufacturer states an equalizing charge is a special charge given to restore all cells to a fully charged condition. This company recommends that their batteries be given an equalizing charge on January 15 of each year or on the first work day following, and whenever the quarterly individual cell voltage readings show one or more cells with a voltage of .05 volts below the average of the string.

When a power failure occurs during an equalizing charge resulting in the discharge of the battery, repeat the equalizing charge after the power is restored.

The time required to give an equalizing charge by the constant voltage method will depend upon what constant voltage is used and the battery temperature. Raise the voltage to the maximum permitted and continue the high float until a constant period is obtained for the number of hours shown in the table for the voltage and battery temperatures furnished with the battery by the manufacturer.

The constant period is for no increase in specific gravity after the current to the battery has been tapered to and remains constant. It is important that the specific gravity readings to determine the constant period be not started as long as the charge rate to the battery is decreasing.

When the maximum charge voltage to the battery is limited to less than 2.30 volts per cell the specific gravity will be slow in showing an increase; and after the number of hours charge indicated has been given and the float voltage has been returned to normal, the specific gravity may show a gradual increase during the next six weeks of normal float operation.

When battery temperature is other than one of the values in the table, determine the number of hours in proportion. The same applies when the voltage is other than one listed.

CALCIUM CELLS

Equalizing Charge by Constant Voltage Method

Average Cell Volts	Battery Temperature				
	65°F.	75°F.	90°F.	100°F.	110°F.
	HOURS CONSTANT PERIOD				
2.20	720	455	230	140	90
2.25	460	285	145	90	55
2.30	365	180	90	55	35

• • •

Q. Should we consider the use of a dial speed tester in an exchange of nearly 1,000 stations? If so, what type is recommended?

A. It is our opinion that a dial speed tester will always prove a good investment in any dial exchange. Improper dial maintenance may cause serious impairment to service and will certainly increase trouble cost. There are various types of good dial speed testers on the market. Personally, we prefer the type that is automatic in operation and may be reached via a selected level. With this type, a local troubleman may dial the number assigned for the dial speed tester without the service of a testman on the trouble desk. A second dial tone is heard to indicate that the dial speed tester has been "seized" and is ready for the test to be made. This second tone is about twice as loud as the regular dial tone.

The troubleman then dials the digit "0," after which the dial speed test unit returns spurts of dial tone to indicate the speed of the dial as follows:

(1) One spurt of tone indicates a slow dial, less than nine impulses per second.

(2) Two spurts of tone indicate a normal dial, nine to 11 (inclusive) impulses per second.

(3) Three spurts of tone indicate a fast dial, faster than 11 impulses per second.

(4) These spurts of tone are also twice as loud as the regular dial tone so that they may be heard clearly even over extra-long rural lines.

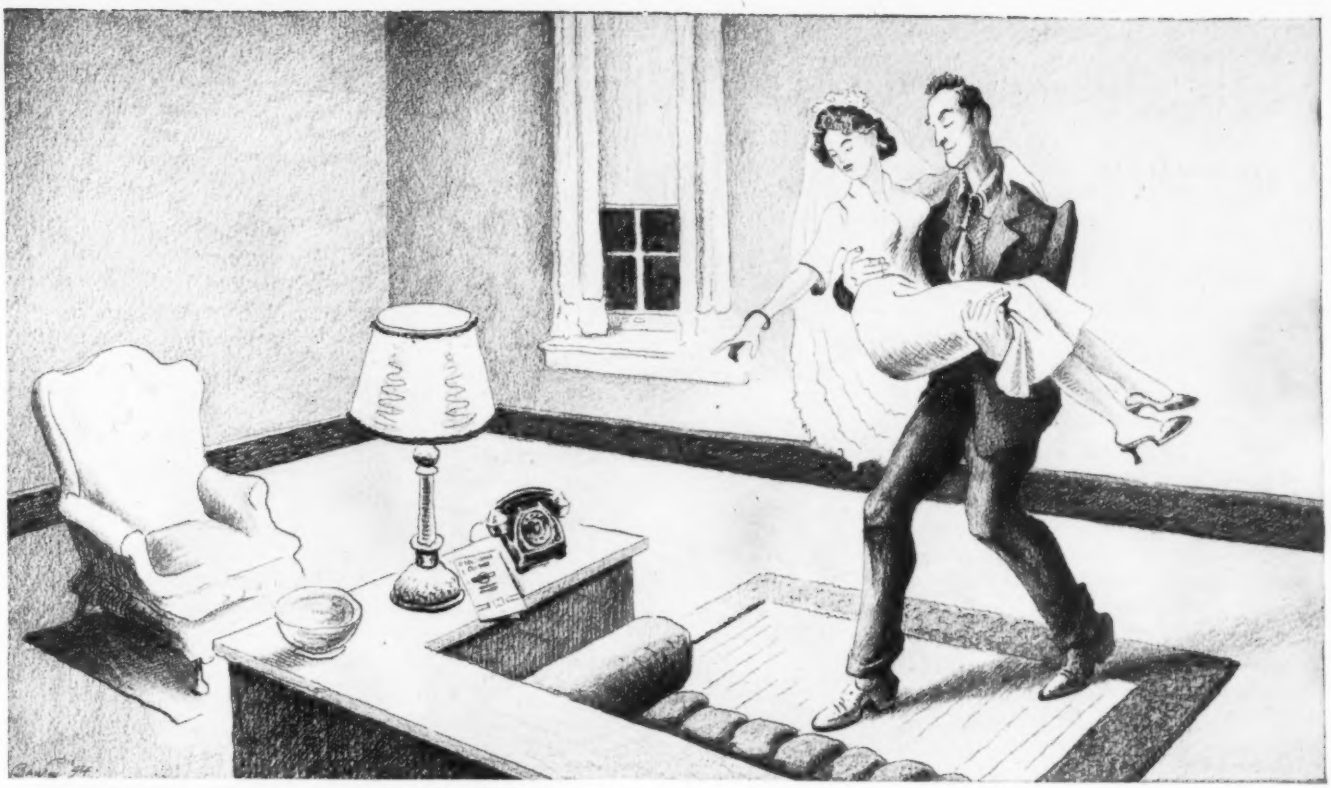
If exactly 10 impulses are not received by the dial speed test set, the digit is absorbed and steady dial tone is returned immediately to indicate that a wrong digit was received and that "0" should be dialed again.

After the special spurts of tone have been delivered, this unit automatically resets itself and after a short interval, steady dial tone is returned to the repairman. He may adjust and re-test the dial without having to re-dial the level assigned to the dial speed tester.

When the unit is accessed from a testboard, a busy lamp is provided on the testboard to indicate to the testman when the device is being used by a repairman or by another position of the test board. A supervisory lamp is also provided to give a visual indication whenever the unit is delivering tone.

V V

"Meditation is the tongue of the soul and the language of our spirit."—JEREMY TAYLOR.



FIRST TELEPHONE

BY Thomas Hart Benton

When the new telephone is installed, the newlyweds *know* they have set up housekeeping.

With every telephone goes a directory to be worn threadbare by the time a new one is issued. New subscribers can find thousands of uses for the traditional American guide to better living.

From association with our clients, we know that telephone men are dedicated to public service. Nothing distresses them more than inability to provide complete service to new subscribers.

The Loomis Advertising Company believes a well developed directory is a major step in rendering complete telephone service.

When you turn over to Loomis Advertising Company the many irksome details of building a modern telephone directory you gain in two ways. You have a directory that is second to none in appearance, utility and revenue. You free personnel to do what they can do best—provide telephone service.

You're invited to get further details of Loomis' complete telephone service—without obligation on your part. Just call or write the Loomis office nearest you.

LOOMIS

ADVERTISING COMPANY

683 cities and towns in 19 states are served by 231 Loomis-built directories.

We have commissioned Mr. Benton to draw four scenes of American life. A limited edition of 9 by 15-inch prints suitable for framing has been ordered. We think they offer a nice public relations touch to telephone office decoration. To get your Benton print FREE, write Wesley H. Loomis III, 810 Baltimore, Kansas City 5, Mo.

Lifts YELLOW PAGE revenue... Builds PUBLIC RELATIONS

"Where to call"

KANSAS CITY
810 Baltimore
HArrison 1270

FORT WAYNE
229 E. Berry St.
EAstbrook 3477

California Association Meeting In February Draws Attendance of 150

By ALLEN R. STACEY

THE California Independent Telephone Association held its semi-annual meeting on Feb. 10 and 11 in Fresno, Cal. The sessions were presided over by Richard Crowe, association vice president, with 150 operating people, manufacturers' representatives and interested persons in attendance.

Since the purpose of the mid-winter meeting was to exchange ideas between operating people, the program was in the form of discussion groups rather than presentation of prepared lectures. Beginning with reports from the association standing committees the assembled delegates discussed the problems of most concern to the Independent operating telephone man today.

Willard Wade, chairman of the Toll Settlements Committee, reported on the progress of the USITA on two basic toll studies. He said that progress was being made on both the toll line haul cost study by certain Independent companies for sampling purposes and upon the studies designed to bring the 1952 "A" and "B" studies up to 1954 levels.

A Bell System representative, Richard Gentry, then discussed in detail the preparation of a monthly toll settlement upon the standard cents-per-message contract agreement. Several Independent company men had previously requested a discussion of this item in order that they might completely understand the composition of the cents-per-message contracts.

Allan R. Stacey rendered the report of the association's Dial Service and Advertising Committee. He mentioned that several Independent companies are now giving subscribers personal telephone number booklets and recommended that these booklets be included with the directories when directories are delivered.

He pointed out that some Independent companies were considering a termination fee or contract guarantee for installation of certain new products on the market such as automatic answering machines and colored telephones. This would, to a certain extent, protect the Independent operator against return of some of the devices being promoted nationally after the expiration of what might be termed the "novelty period."

Mr. Stacey discussed the program of the Bell System in the state of California for installation of centralized automatic message accounting centers up and down state and relayed the recommendation of the committee that the Independents use care in the purchase of any equipment used in the revenue accounting department which means first evaluating effects of automatic ticketing by the Bell center of the Independent traffic.

An introduction was made of the members of the newly established Methods and Practices Committee under the chairmanship of Mervin H. Alexander, general plant manager, Kern Mutual Telephone Co. Members of this committee are: W. Gilman Snyder, president, Western Telephone Co.; Owen G. Jarboe, general traffic manager, General Telephone Co. of California; Keith Vine, division auditor, California Water & Telephone Co., and John H. Barrows, staff engineer, California Interstate Co.

The objectives and purposes of this committee are: To inform Independents of new plant and equipment practices in the telephone industry and to set up training schools from time to time to demonstrate these new practices.

Other subjects of discussion included U. S. forestry right-of-way usage, leasing of telephone equipment, fire alarm and police reporting systems, telephone credit card usage, "dial your number" types of automatic ticketing and outdoor paystation booths.

V V

Independents and Bell Join in Repairs After New York Fire

"The 'team play,' spirit of cooperation and friendly association that characterize operations of the nation's telephone companies was demonstrated during the last few days when three Independent companies and three Bell System companies joined with the Copake Telephone Co. to speed the restoration of service in Millerton, N. Y., after a disastrous fire destroyed the Copake company's telephone office there." The foregoing is a quote from the Hudson (N. Y.) *Register-Star* dated Mar. 30.

On hand to direct repair operations was J. B. Ackley, president of the Copake company, the newspaper reported. Independent companies lending assistance were: Berkshire Telephone Corp., Kinderhook; Germantown Telephone Co., Inc., and Orange County Telephone Co., Middletown. Bell System companies assisting were: New York Telephone Co., Southern New England Telephone Co., and Western Electric Co.

Also of assistance was the Bohnsack Equipment Co. of Germantown, which had in stock in its warehouse the equipment needed to convert the Copake company's common battery board to harmonic ringing.

V V

North Carolina Independent Celebrates 50th Birthday

The North State Telephone Co., High Point, N. C., has just celebrated its first 50 years of corporate existence, Robbins Tilden, secretary-treasurer and general manager of the company, reports.

Starting with 325 telephones in 1905, the company's High Point exchange today serves 19,506 stations. Its Thomasville exchange has grown from zero to 4,889, and Randleman exchange from 68 to 970, for a grand total of 25,347 company-owned telephones. (According to TELEPHONY's 1954 Directory, the North State company furnishes switching service for 1,220 telephones.)

J. F. Hayden, president and general manager of the company until his death in 1952, was founder of the North State company. Mr. Hayden was succeeded as president by his widow, Velva Green Hayden.

Other officers of the company today, in addition to Mrs. Hayden and Mr. Tilden, are: H. A. Millis and J. S. Welborn, both vice presidents; R. J. Johnson, general auditor, and T. A. Tilden, chief engineer and general plant superintendent.

As part of the observance of the golden anniversary, North State got up a 24-page illustrated booklet telling the history of "Half a Century of Public Service."

V V

"Every age has its problems, by solving which humanity is helped forward."—HEINRICH HEINE.

New Portable Telephone System Can Carry 12 Conversations Per Cable

A NEW, portable, G. I. telephone system, which can handle three times as many conversations over a single cable as comparable Korea and World War II systems, has been developed for the U.S. Army Signal Corps by Bell Telephone Laboratories.

Basic equipment for the new telephone system is contained in units about the size of large suitcases which can be handled by only one or two men. These units are designed so they can be stacked one on another. The "carrier" principle used for the new system allows 12 conversations to share the same cable by using a different frequency for each.

The system, providing for 12 simultaneous conversations, can be used for distances up to 200 miles. Another, a four-channel system, can be used for four simultaneous conversations at distances up to 100 miles. Several of these wire systems linked together can form a communication system of about 1,000 miles. They may also be operated in conjunction with a G. I. radio relay system developed at Bell laboratories.

Recently developed miniaturized parts can be credited with the sharp reduction in size and weight of the new equipment. The earlier, four-channel unit, for example, weighed 475 pounds and occupied 20 cubic feet of space. Complete with its power supply, the new four-channel terminal weighs 178 pounds and occupies only 5½ cubic feet of space. The cable used for the systems can be strung on poles, laid on the ground, or buried.

New type repeaters have also been designed, to be used at intervals in order to restore the level of the transmitted signals and extend the range of the systems.

Important new features facilitate testing and maintenance while all regular channels are in service. A portable test set provided with the 12-channel system contains a transistor oscillator, one of the first applications of the Bell Laboratories-invented transistor in quantity-produced military equipment.

A Bell technician tests the water-tight repeater, which is used to restore the level of transmitted signals every 6 miles on a 12-channel system.

Field equipment designed by the Bell laboratories for the Army is tested for its ability to withstand desert heat and arctic cold. It is subjected to vibration, bounce and shock tests, exposed to 100 per cent humidity and to wind and rain.

The new military carrier systems have recently been placed in production by the Western Electric Co., manufacturing unit of the Bell System.

The repeater on the new G.I. telephone system, shown here, amplifies conversations, which may be transmitted over a distance of 100 miles.

V V

Plan $16,200,000 Construction For Florida Independent

A new construction budget of $16,200,000 was approved by directors of the Peninsular Telephone Co. of Tampa, Fla. This is 28 per cent above last year's budget, which had been the all-time high in construction expenditures until this time.

The present over-all average investment per Peninsular telephone was reported as $255, while each new telephone installed requires an additional investment of approximately $350.

Carl D. Brorein, president of the company, reported the net gain in telephones during 1955 to date is 7,028. This is almost one-third of the 1954 net gain, which was the greatest ever experienced by the company in a single year.

Mr. Brorein told stockholders the 1954 gross construction budget of $12,600,000 was paid for largely by the issue of both common stock and bonds. It is contemplated that more common stock will be issued in the near future on a basis of one share for each five outstanding.

Included in the 1955 budget are new buildings for Sarasota and Winter Haven, similar to those just completed in Clearwater and Plant City. In this connection, a large display of Peninsular's postwar building program was shown to the stockholders—the company had built 29 new offices in this period, enlarged seven and made improvements at seven others. Almost 2,200 are employed by Peninsular at this time.

All members of the board were reelected, with the addition of Carl D. Brorein, Jr., secretary of the company, who was named as a new director.

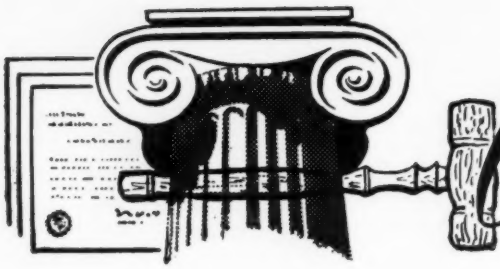
At the regular annual session of the board, held after the close of the stockholders meeting, present officers were reelected. They are Carl D. Brorein, president; Howard P. Macfarlane and A. B. Jordan, vice presidents; W. A. Brown, treasurer; Carl D. Brorein, Jr., secretary, and J. C. Handly, assistant secretary and assistant treasurer.

Mr. Brorein Jr. and D. A. Kafka, general commercial superintendent, were named as assistant general managers.

The board is comprised of both Broreins, Mr. Macfarlane, G. R. Griffin and R. D. Jackson, all of Tampa; Weyman Willingham of St. Petersburg; Tom B. Swann of Winter Haven; Murray H. Coggeshall and Sumner B. Emerson of New York; Earl L. Peters, Toledo, and L. C. Gerry, Providence, R. I.

V V

"We are at the economic crossroads today, and 1955 may well determine whether more socialism shall be the lot of the next generation. Once a government is allowed to compete with its citizens in business, it has a tendency to grow until it stifles private initiative. I'm of the firm conviction that the only time government should enter the business of business is when private enterprise is unable to do so. I believe in a balanced federal budget. I think it could be balanced if government got out of business."—WILLIAM JACKMAN, *president, Investors League, Inc.*



Courts and Commissions

OK Schedules of Higher Rates For Nebraska Independent

General rate increases were approved by the Nebraska Railway Commission for the Chambers Independent Telephone Co. on Mar. 18. Increases are effective Apr. 1. Also approved was the establishment of rates for other services.

Following are the old and the new rate schedules:

	Old (Net)	*New (Net)*
One-party business	$4.50	$5.00
Two-party business	3.50	4.00
One-party residence	2.85	3.25
Two-party residence	2.50	2.85
Four-party residence	2.00	2.30
Service Station	.87½	1.30
Pay Station		
Per local call	None	.10

Under the new rates the company's operating revenue is estimated to be $9,340; expenses, $6,502, exclusive of taxes of $1,160. The estimated rate of return is 6.01 per cent upon a net book base of $27,907, which includes an allowance for cash working capital, materials and supplies.

The application was necessary because of increased operating expenses, particularly in maintenance and wage rates.

The company provides dial service over metallic lines to 281 customers at Chambers, of which 170 are service station subscribers. The company owns no rural lines. However, all farmer-owned lines are practically new, having been built and made metallic in 1953.

V V

Arkansas Commission Hears A Number of Cases

Recent action before the Arkansas Public Service Commission includes the following:

The Arkansas Associated Telephone Co., Leachville, has filed rate schedules to apply following installation of an automatic exchange at Black Oak, to be completed around Sept. 1.

The Arkansas Telephone Co., Inc., has applied to purchase the Clinton-Shirley Telephone Co., and plans are under way for cut-over of the Clinton and Shirley exchanges to dial operation. The company has also asked authority to issue $80,000 in common and preferred stock.

The Union Telephone Co., Smackover, has received approval of amendment to its articles of incorporation, and the commission has heard its application to purchase the Junction City Telephone Co. This exchange will be cut over to dial operation. The Union company has also filed an application now pending by the Southwest Arkansas Telephone Cooperative, to have allocated to it the service area of the Emerson exchange, which would also be cut over to dial. Hearings are scheduled before the commission beginning Apr. 25.

Prairie Grove Telephone Co., Dutch Mill, has received approval of amendments to its articles, also authority to issue $40,000 preferred stock and an additional loan of $50,000 from Chase Manhattan Bank. Proceeds will be used for additions and constructions to its properties.

O. D. and Ruth Wilson, Perry County Telephone Co., have applied to sell their Perryville exchange to Russell Falls and J. D. Baker, Jr.

V V

Pennsylvania Company Places $375,000 Bond Issue

Palmerton (Pa.) Telephone Co. has placed $375,000 principal amount of 25-year first mortgage bonds with Berkshire Life Insurance Co., Pittsfield, Mass., it was reported on Apr. 4.

The loan, which was arranged through The First Boston Corp. and Drexel & Co., was made in connection with the contemplated sale of the company by Pennsylvania Power & Light Co. to a group of local investors.

V V

Sale of Minnesota Company Okd

On Apr. 4 the Minnesota Railroad & Warehouse Commission authorized the sale of the South Shore Telephone Co., operating in Minnesota Lake Township, Faribault County, to the Minnesota Lake Telephone Co. The South Shore company serves about 15 stations.

North Carolina Commission Orders Rate Reduction

The United Telephone Co. of the Carolinas, Inc., which has its North Carolina headquarters at Southern Pines, was ordered by the North Carolina Utilities Commission on Apr. 5 to reduce its rates by $50,000 a year, spreading the reduction to residence subscribers by lowering their bills 50 cents each per month, effective on and after Apr. 11.

The commission said it was issuing the order because an examination of the company's books and records showed that it was earning a rate of return "in excess of that deemed fair and reasonable by the commission."

The commission said the reduction it has ordered will remain in effect until "financial operating results warrant further revision," and that it was assigning the reduction to residence exchange rates because "present differential between business and residential rates does not fairly represent the difference in value of the respective services."

The order has the effect of retracting an increase the commission allowed the company in December, 1954. The company had applied for $60,000, and the commission allowed it $50,000.

During 1953, the company, according to commission records, had a return of 8.88 per cent on an average North Carolina investment of $2,342,127, one of the highest rates of return in the state. Its operating revenues totaled $1,194,375.20. After deducting all expenses and taxes it had a net income of $208,164.

V V

Indiana Independent Granted Part of Requested Increase

An annual rate increase was granted to the Citizens Independent Telephone Co., Terre Haute, on Mar. 16, by the Indiana Public Service Commission. The result will be a net increase of about $85,400 (TELEPHONY, Aug. 28, 1954, p. 36).

The company received less than a third of the rate increase it requested. However, the commission said the increase would give the company a 6 per

cent return on the value of its investment.

Citizens Independent operates more than 39,000 telephones, practically all of which are located in Vigo, Rush, Fayette and Franklin counties.

V V

Kentucky Commission Ok's Sale; Authorizes Rate Increase

The Kentucky Public Service Commission on Apr. 1 authorized sale of the Vine Grove Telephone Co. to the Brandenburg Telephone Co.

Max E. Hosea, owner of the Universal Telephone & Telegraph Co., Jenkins, had applied to buy the Vine Grove company (TELEPHONY, Nov. 13, 1954, p. 42). After hearings, the commission said it believed the Brandenburg company could give better service at lower cost.

The purchaser proposes to convert the Vine Grove facilities to dial, while Mr. Hosea planned to retain the manually operated telephones there, the commission added.

Also, the Vine Grove system will be integrated with the Brandenburg system so customers may make a greater number of calls without toll charges, the commission said.

In another action, the commission authorized the Cumberland Telephone Co. to apply mileage charges of 70 cents a quarter-mile for one-party lines, 50 cents for two-party lines, and 25 cents for five-party lines. This will result in a minor increase in rates, the commission said.

V V

General of the Southwest Gets Two Rate Increases in Texas

General Telephone Co. of the Southwest, San Angelo, Tex., was granted two rate increases in Texas during the month of March. They are as follows:

Exchange	*Old*	*New*
Miles:		
Magneto, 293 stations		
One-party business	$5.00	$8.00
Two-party business	3.65	7.00
One-party residence	3.00	4.50
Two-party residence	2.65	3.50
Sonora:		
Dial, 935 stations		
One-party business	5.25	8.00
Two-party business	4.25	6.50
One-party residence	3.00	4.00
Two-party residence	2.50	3.50
Four-party residence	2.25	3.00

V V

Asks Raise in Toll Rates

The Pennsylvania Public Utility Commission was asked for authorization of a five-cent increase in toll rates in a number of areas by the Pennsylvania Community Telephone Co., it was reported on Apr. 5. The company is a subsidiary of Commonwealth Telephone Co., Dallas, Pa., and was purchased last August by the Sordoni Enterprises.

V V

Kansas Independent to Sell $1,600,000 of Common Stock

Western Light & Telephone Co., Inc., Kansas City, Mo., registered 57,000 shares of its common stock with the Securities and Exchange Commission, it was reported on Apr. 1. Based on recent quotations this would be worth about 1.6 million dollars.

The company will offer holders rights to subscribe on the basis of one additional share for each seven held. Record date and subscription price will be announced.

Dean Witter & Co. and associates will underwrite the offering. Proceeds will be used to pay off bank loans made for construction.

V V

Asks to Buy Indiana Company

Authority to acquire the Arcadia Telephone Co. was sought by the General Telephone Co., of Indiana, Lafayette, on Mar. 22 in a petition filed with the Indiana Public Service Commission.

V V

Three Kansas Companies Granted Rate Increases

Three telephone companies were granted rate increases on Apr. 6 by the Kansas Corporation Commission.

Jamestown Telephone Co. asked for $3,987 annually and was granted $3,594.

Arcadia Telephone Co. asked $3,132 and was allowed $2,334.

Wilmore Telephone Co. asked and was granted $1,600.

V V

Wisconsin Senate Confirms New Commission Member

The Wisconsin Senate on Mar. 29 confirmed Assemblyman Nicholas J. Lesselyoung of Fond du Lac as a new member of the Wisconsin Public Service Commission.

Lesselyoung, 38, was nominated for the position by Governor Kohler to suc-

1955 CONVENTIONS

Wisconsin State Telephone Association, Loraine Hotel, Madison, May 4 and 5.

Indiana Telephone Association, Claypool Hotel, Indianapolis, May 11 and 12.

The Illinois Telephone Association, Pere Marquette Hotel, Peoria, May 19 and 20.

Kansas-Missouri Telephone Associations (joint convention), Town House Hotel, Kansas City, Kan., May 23 and 24.

Pennsylvania Independent Telephone Association, Pocono Manor Inn, Pocono Manor, June 1 and 2.

California Independent Telephone Association, Ambassador Hotel, Los Angeles, June 9 and 10.

New York State Telephone Association, Scaroon Manor Hotel, Schroon Lake, June 13, 14 and 15.

Oregon-Washington Independent Telephone Associations (joint convention), Olympic Hotel, Seattle, Wash., June 17 and 18.

Maine-New Hampshire-Vermont Telephone Associations (joint convention), Poland Spring House, Poland, Maine, June 28, 29 and 30.

Michigan Independent Telephone Association, Pantlind Hotel, Grand Rapids, Sept. 8 and 9.

Rocky Mountain Telephone Association, Hotel Utah, Salt Lake City, Utah, Sept. 15 and 16.

Arkansas Telephone Association, Arlington Hotel, Hot Springs, Sept. 26 and 27.

United States Independent Telephone Association (annual convention), Conrad Hilton Hotel, Chicago, Oct. 10, 11 and 12.

North Carolina Independent Telephone Association, The Carolina Hotel, Pinehurst, Oct. 17 and 18.

Oklahoma Telephone Association, Huckins Hotel, Oklahoma City, Oct. 20 and 21.

Virginia-West Virginia Independent Telephone Associations (joint convention) Hotel Roanoke, Roanoke, Va., Oct. 20 and 21.

Alabama-Mississippi Telephone Association, Thomas Jefferson Hotel, Birmingham, Ala., Nov. 14 and 15.

ceed W. H. Whitney of Madison. He will have a six-year term.

V V

Three Wisconsin Companies Ask for Rate Increases

The Wisconsin Public Service Commission was to have heard the following applications for authority to increase rates:

The Franksville Telephone Co. (Apr. 14).

Newton Manitowoc Telephone Co. (April 13).

Maple Telephone Co. (Apr. 6).

V V

British Columbia Company Plans $6,000,000 Stock Issue

British Columbia Telephone Co.'s 6,000-share (6 million dollars Canadian) offering at $100 par 4¾ per cent cumulative redeemable preferred stock was reported on Apr. 1 to be expected on the market the week of Apr. 4. W. C. Pitfield & Co., Ltd., and associates were expected to retail the shares at par.

The company will use proceeds for extension and improvement of plant and properties.

V V

General of Pennsylvania Names General Sales Supervisor

Fred E. Cunningham has been named general sales supervisor for General Telephone Co. of Pennsylvania, according to a recent announcement by L. F. Shepherd, president. He was formerly with General Telephone Directory Co. as sales supervisor at Erie, Pa.

Mr. Cunningham, a native of Mount Carmel, Ill., has a background of 20 years in the selling field. After 12 years in retail sales he started his telephone career in 1947 as a unit supervisor at Olney, Ill., for General Telephone Directory Co. He was transferred to Erie, Pa., in 1950 as sales supervisor for the directory company.

V V

Set Stock-of-Record Date

F. S. Spring, president of Continental Telephone Co. (formerly Telephone Bond & Share Co., Wilmington, Del.) on Apr. 7 stated regarding the company's proposal to issue 243,060 additional shares of common stock, the board of directors has fixed the record date as the close of business on Apr. 7, 1955, for determining those entitled to subscribe on the basis of one share of common stock for each four shares presently held. The expiration date of such rights has been fixed as 2:30 p.m., central standard time on Apr. 20, 1955.

FCC Staff Asks Denial of Bell Petition to Buy Tomball Company

THE Federal Communications Commission has been urged to deny approval of a Bell company purchase of an Independent telephone company property.

The case involves the proposed acquisition of the Tomball (Tex.) Telephone Co. by the Southwestern Bell Telephone Co. (TELEPHONY, Feb. 26, p. 50). It has been opposed by the United States Independent Telephone Association and by the Texas Telephone Association on grounds that the purchase price is too high and that the increase in the proportion of Bell System operation as compared with Independent control of the telephone industry in Texas would not be in the public interest.

The exchange of the Tomball company is located 30 miles north of Houston and has 872 stations.

The FCC staff delegated to deal with such matters as the Tomball case, has recommended to the commission denial of the application of Southwestern Bell to acquire the Tomball company. In proposed findings of fact and conclusions of law submitted last week by Harold G. Cowgill, Chief of the FCC Common Carrier Bureau, the following points were made in support of the staff's position:

(1) Inasmuch as the issuance of a certificate in a case of this kind provides immunity from the anti-trust laws, the applicant is required to meet its burden of proof in a most clear and convincing manner. This it has failed to do.

(2) Although this commission does not have jurisdiction to determine the reasonableness of intrastate charges, the fact that such charges will be higher under the proposed acquisition is a factor to be considered. . . .

(3) When such increased rates are weighed against the nebulous service advantages claimed by Bell, it is impossible to say . . . that there is a net balance of advantage to the persons to be served.

(4) Tomball's "estimated" net investment in the properties is $96,600 as contrasted with Southwestern Bell's proposed investment of $200,000. . . . An unreasonable purchase price has been held not to be in the public interest in previous cases arising under this section of the act.

(5) The applicant has not established that the proposed acquisition will be of advantage to the persons to whom service is to be rendered and in the public interest. . . . Accordingly, the application should be denied, without prejudice, however, to the filing of a new application.

Electronics Conference Meets In Chicago in October

O. I. Thompson, educational director, DeVry Technical Institute, Chicago, has been elected president of the 1955 National Electronics Conference, Inc. G. E. Anner, associate professor, electrical engineering department of the University of Illinois, was elected chairman of the board of directors.

It has also been announced that the 11th annual conference will be held Oct. 3, 4 and 5, 1955, at the Hotel Sherman in Chicago.

At the 1954 National Electronics Conference 86 papers covering a broad field of electronic research, development and industrial application were presented. The technical program was supplemented by 158 booths of exhibits by the foremost manufacturers in the electronic field.

The "Proceedings of the National Electronics Conference — 1954," are available from the National Electronics Conference, Inc., 84 E. Randolph St., Chicago 1. This book contains all of the technical papers and luncheon addresses presented at the 1954 conference and a cumulative index by subject and author of all of the technical papers presented during the 10-year life of the National Electronics Conference.

V V

Mo. Company Appoints Manager

Herbert Shows, of LaRose, La., has been employed to manage the Bethel (Mo.) Rural Telephone Co. and assumed his new duties on Mar. 15. He has been assistant manager of the La-Fourche REA Telephone Co. at LaRose for approximately three years.

V V

Asks to Buy Missouri Company

On Apr. 4 the Missouri Public Service Commission was to have heard the application of F. L. Joste to sell, and Blaine G. Joste to purchase the Cuba Telephone Co.

COLLECTION VEHICLE

Concluded from page 17

collections made throughout this company:

Ford Business Coupe (West Coast)	$1,750.00
Four Chutes (Each $35.00)	140.00
Rear Chute Support	3.50
Metal Partition	6.50
Equipment for Storage of Empty Receptacles and Other Incidental Material	18.50
Total	$1,918.50

NOTE: The prices shown for equipment are those quoted by a California sheet metal company, which has prints and patterns on file and can provide the equipment on regular order.

The above equipment can be readily installed by any utility shop. Prices shown, therefore, do not include installation, which would be in the neighborhood of $25.

The business coupe is not altered by the installation of the collection equipment, which can easily be removed and installed in another vehicle.

To summarize, this new collection vehicle offers the following advantages:

(1) Visibility.
(2) Comfort and ease of handling.
(3) Versatility. The vehicle is a passenger car despite the collection equipment and can be used as such at any time without changes or readjustments.
(4) Efficient operation with the locking and unlocking function completely eliminated.
(5) Uninterrupted security as a result of the feature mentioned in (4).
(6) Rapid unloading.
(7) Economy.

The general commercial department of the General Telephone Co. of California will be glad to provide drawings, photographs or other assistance to any company interested in adopting this type of collection vehicle.

The General company's address is: 1314 Seventh St., Santa Monica, Cal.

V V

Lincoln T&T Names W.D. Quinn Sales Supervisor

The appointment of William D. Quinn as sales supervisor of The Lincoln Telephone & Telegraph Co. has been announced by K. L. Lawson, general commercial superintendent. Mr. Quinn becomes a staff member of the general commercial department and will direct the company's sales promotion activities in long distance and exchange service and supplemental services. Mr. Quinn is succeeded by Dean F. Hamilton, formerly commercial representative, who becomes directory

W. D. QUINN

compilation supervisor. In this position he will direct the compilation and printing of the Lincoln telephone directory. At Hastings, M. L. Pilfold has been appointed district clerk succeeding Joe Adamson who was recently appointed manager at Tecumseh.

After attending the University of Nebraska, Mr. Quinn joined the company in 1941 as a commercial representative. In 1942 he entered military service and served in Europe with the 103rd Infantry Division. He became directory compilation supervisor in 1952.

Mr. Hamilton joined the company in 1942 as a clerk. He became a solicitor-collector in 1948 and a commercial representative in 1951.

After a year with the AT&T company, Mr. Pilfold joined the Lincoln company in 1947 as a groundman in the construction department. During World War II he spent four years in the Army where he was a 1st Sergeant in the 711th Tank Battalion in the Pacific Theatre. Since 1953 he has served as combinationman at Osceola.

V V

Standards Save Money and Time, ASA Director States

"There are multitudes of savings in money, time, efficiency and comfort never touched upon, which engineers, office managers, purchasing men and other executives have wanted something done about for a long time, and standards will be able to accomplish many of these savings."

This is the conclusion of Vice Adm. George F. Hussey Jr., USN (ret.), managing director of the American Standards Association, who recently released the association's annual report.

Admiral Hussey added, "(For example), electrical engineers will find it easier to speak the same language. The American Standard Graphical Symbols for Electrical Diagrams has just been revised, employing symbols familiar to the majority of engineers. Coordination of these symbols with international standards was carried out through the International Electrotechnical Commission."

Of the 1,440 American Standards in use in the United States, 152 were approved in 1954, he said. Of these, 64 were new standards, 88 were revisions. The greatest number of new standards was in the electrical field. Among the electrical standards of interest to the telephone industry are:

C8.22—1954
(ASTM D 470—52T)
Methods of testing rubber insulated wire and cable

C8.23—1954
(ASTM D 755—52T)
Specifications for performance synthetic rubber compound for insulated wire and cable

C8.24—1954
(ASTM D 754—52T)
Specifications for heat-resisting synthetic rubber compound for insulated wire and cable

C8.25—1954
(ASTM D 532—49)
Specifications for rubber sheath compound for electrical insulated cords and cables

C8.26—1954
(ASTM D 353—52T)
Specifications for performance rubber compound for insulated wire and cable

C8.27—1954
(ASTM D 469—52T)
Specifications for heat-resisting rubber compound for insulated wire and cable

C8.28—1954
(ASTM D 866—46T)
Specifications for GR-S synthetic rubber sheath compound for electrical insulated cords and cables

C8.29—1954
(ASTM D 574—46T)
Specifications for ozone-resistant type insulation for insulated wire and cable

C8.30—1954
(ASTM D 734—50T)
Specifications for polyvinyl insulating compound for insulated wire and cable

C8.31—1954
(ASTM D 753—49)
Specifications for GR-M polychloroprene sheath compound for electrical insulated cords and cables where extreme abrasion resistance is not required

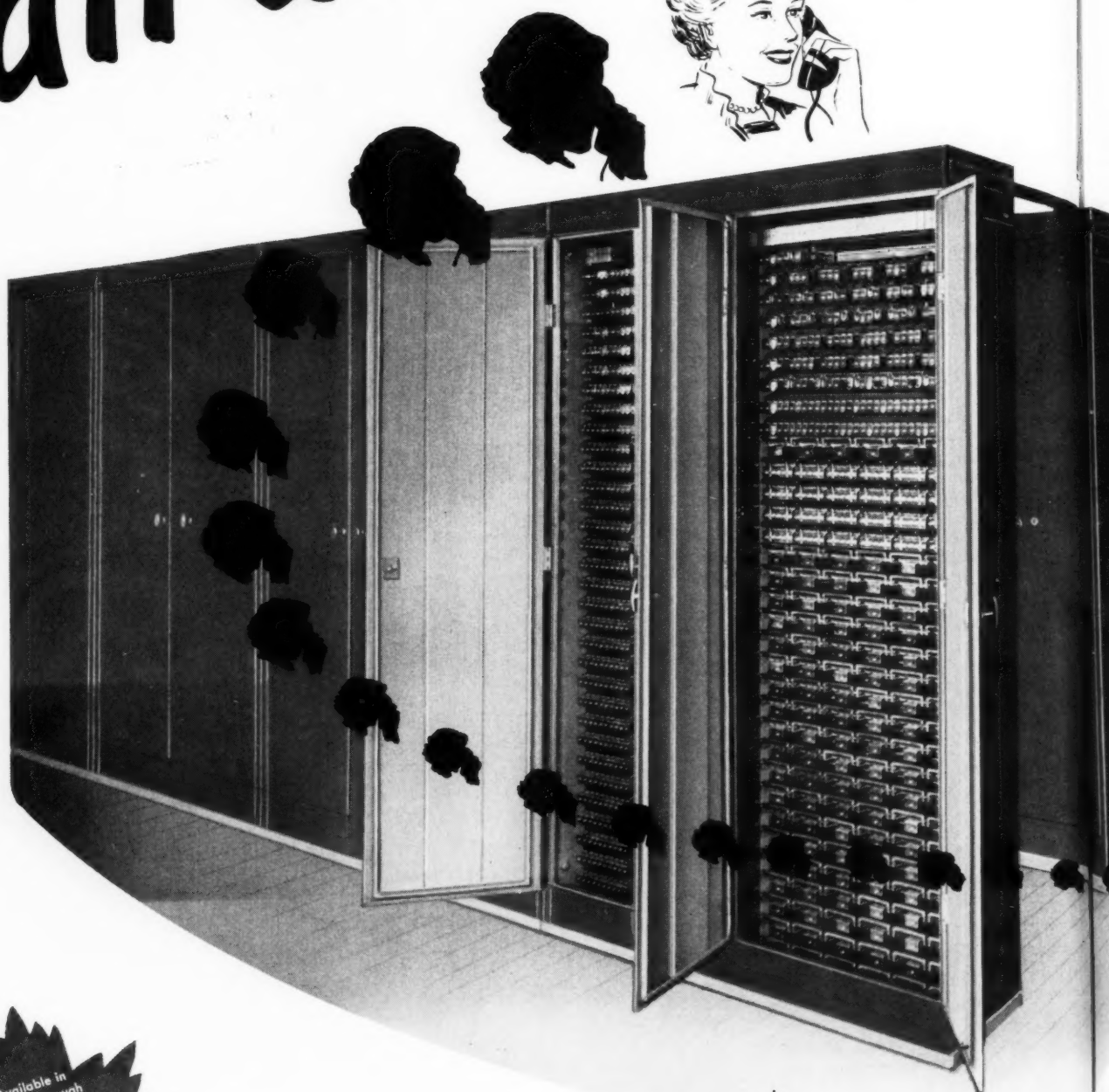
C8.32—1954
(ASTM D 752—49T)
Specifications for GR-M polychloroprene sheath compound for electrical insulated cords and cables

C8.33—1954
(ASTM D 1047—49T)
Specifications for thermoplastic vinyl polymer sheath compound for electrical insulated cords and cables

(Please turn to page 40)

XUM

Call after call



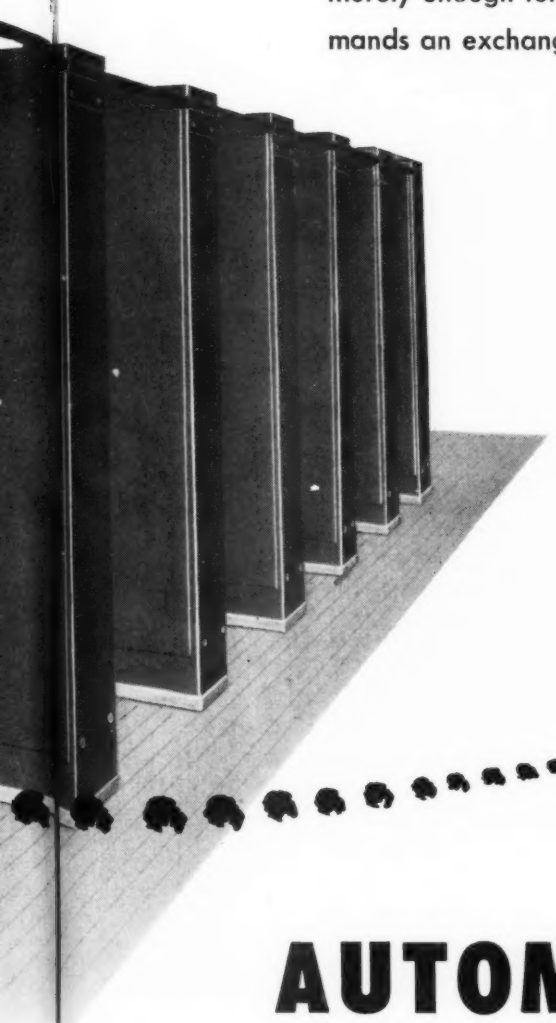
Available in Canada through ERICSSON TELEPHONE SALES of CANADA, Ltd. 1410 Stanley Street Montreal 2, P.Q.

NORTH

l after call....

Millions of calls for a million reasons—to the grocer, the doctor, between friends or business men, keep our telephone exchanges alive day after day, year after year with the nation's business. Which reminds us that every subscriber has a real and continuing need of the one thing that telephone companies sell—SERVICE!

Providing this dependable service on a profitable basis requires more than merely enough telephones and lines to reach all the people in your area. It demands an exchange that always provides service, with the lowest possible ratio of "lost calls."



North All-Relay Automatic Exchanges are designed to assure RELIABILITY in the commodity you sell. That's why a North system will serve your subscribers and your balance sheet with the highest ratio of completed calls and the lowest maintenance requirements.

We would appreciate the opportunity of showing you why "call after call . . . " means unit after unit of bankable revenue with

NORTH

All-Relay

AUTOMATIC EXCHANGES

THE NORTH ELECTRIC MANUFACTURING COMPANY

601 South Market Street • Galion, Ohio

C8.34—1954
Specifications for weather-resistant wire and cable, neoprene type

C16.21—1954
Definitions of terms for antennas and waveguides

Admiral Hussey reported that there are 200 national committees composed of experts in engineering, safety, consumer, manufacturing and various other fields, now working on standards projects. The personnel on these committees are appointed by various technical societies, trade associations and other interested organized groups. American standards are products of all these groups.

In addition, some standards, long in use by established technical societies, trade associations, and sometimes, companies, are also submitted to the American Standards Association for approval as American standards.

A document which may affect every American business or industry is the American Standards Association method of recording and measuring injuries received at work. The Bureau of Labor Statistics has put the standard into effect for compiling accident statistics. The National Safety Council, co-sponsors of the standard with the Accident Prevention Department of the Association of Casualty & Surety Companies put the new standard into effect on Jan. 1, and urged all industrial concerns to do the same. Requests for 20,000 copies of the standard have already been received from industry, the admiral announced.

Last year was the first time there have been standards approved for office equipment, Admiral Hussey reported. Seven standards in this field for 1954, he pointed out, indicates a new trend.

The American Standards Association (ASA) is the national clearinghouse for voluntary engineering, industrial and consumer standards. It is made up of 115 technical societies, trade associations, consumer groups, and 2300 individual member companies. ASA is the United States member of the International Organization for Standardization.

V V

"The best public relations for a well-conducted corporation consists of unvarnished truth telling, as verified in independently audited income accounts and balance sheets. My thought as expressed as far back as 1938 is that Marxians, New Dealers, and mixed economy advocates have so warped public impressions of the modern corporation that it is not necessary to gild the lily, but merely to disseminate an understanding of the realities."—M. S. RUKEYSER, *columnist, New York Journal-American.*

NEBRASKANS EMPHASIZE MERCHANDISING

Concluded from page 26

stepped-up effort by telephone companies to secure new business and increased revenues and perhaps to consolidate recent gains."

As part of the over-all plan for accomplishing this stepped-up effort, Mr. Gorman noted: "All of us in the business, both Bell and Independent companies derive much benefit from national advertising of the Bell System." Then he underscored the fact that:

"Another stride in this direction was taken last year when the USITA began an advertising campaign on a national scale. Advertisements about the Independent industry are appearing in several national magazines and in our industry journals.

"The ads are also available to companies in mat form for use in local newspaper releases. They also may be obtained as loose sheets for use as hand-out pieces. . . .

"This national advertising program should lay some of the groundwork for getting the merchandising story of Independent companies across to prospects for service as well as to present customers."

The full text of Mr. Gorman's talk will appear in a future issue of TELEPHONY.

Next to speak was Paul E. Pettygrove, commissioner, Nebraska Railway Commission. He said, "It occurred to me that perhaps the greatest contribution I can make would be to help you take a candid look at yourselves through the eyes of the persons you serve."

In the course of expanding this approach in detail, Mr. Pettygrove stated:

"Along with the majority of other telephone customers, I feel that I have had a fairly good understanding of the principal problems you have had in the postwar expansion of telephone service. While I wasn't too happy in waiting for a telephone or for the kind of service I wanted, I wasn't overly critical of the telephone business. However, now that it is nearly 10 years since World War II ended, I feel that I should be able to obtain the kind and quality of telephone service I want when I want it—and at a fair and reasonable price.

"Naturally, I want more in telephone services today than I did before the war. Here in the United States, we expect and get something better year after year. We feel that failure to progress is one of the most un-American types of failure."

Following Mr. Pettygrove's talk, the Nebraska association approved articles of incorporation for the association. As stated in the association member letter before the convention, "The sole purpose for incorporating is to provide long-needed protection to individual member companies from liability. The proposed corporation will be non-stock, non-profit, and rights and privileges of existing members will remain the same."

The association elected the following directors: John Ahlstrand of Omaha; Vernon Bellows of Blair; Earle B. Blomeyer of Columbus; Pat J. Carey of Petersburg; W. K. Flaming of Elsie; Otto Fuerst of Scottsbluff; K. L. Lawson of Lincoln; C. E. Thompson of Dunning; H. D. Thompson of Wisner, and J. W. Hudson of Aurora, ex-officio member.

The directors elected the following officers: President, Mr. Bellows; vice president, Mr. Carey, and secretary-treasurer, James L. Morrison.

V V

Signal Corps Gives Tests to High Power Transistor

The tiny transistor of electronic fame has virtually stepped into high-powered company today and is moving up to do a big job for the Army, it was stated by the Department of the Army recently.

These facts were disclosed at the Signal Corps Engineering Laboratories, Fort Monmouth, N. J., with a series of tests on transistors developed under Signal Corps sponsorship. In one of the tests, the hum in an automobile radio, normally heard when the instrument is first turned on and warming up, was eliminated by using one of the newly developed transistors in place of a vibrator which changes the current from a 6 or 12-volt battery into the 250 volts needed by the radio tubes.

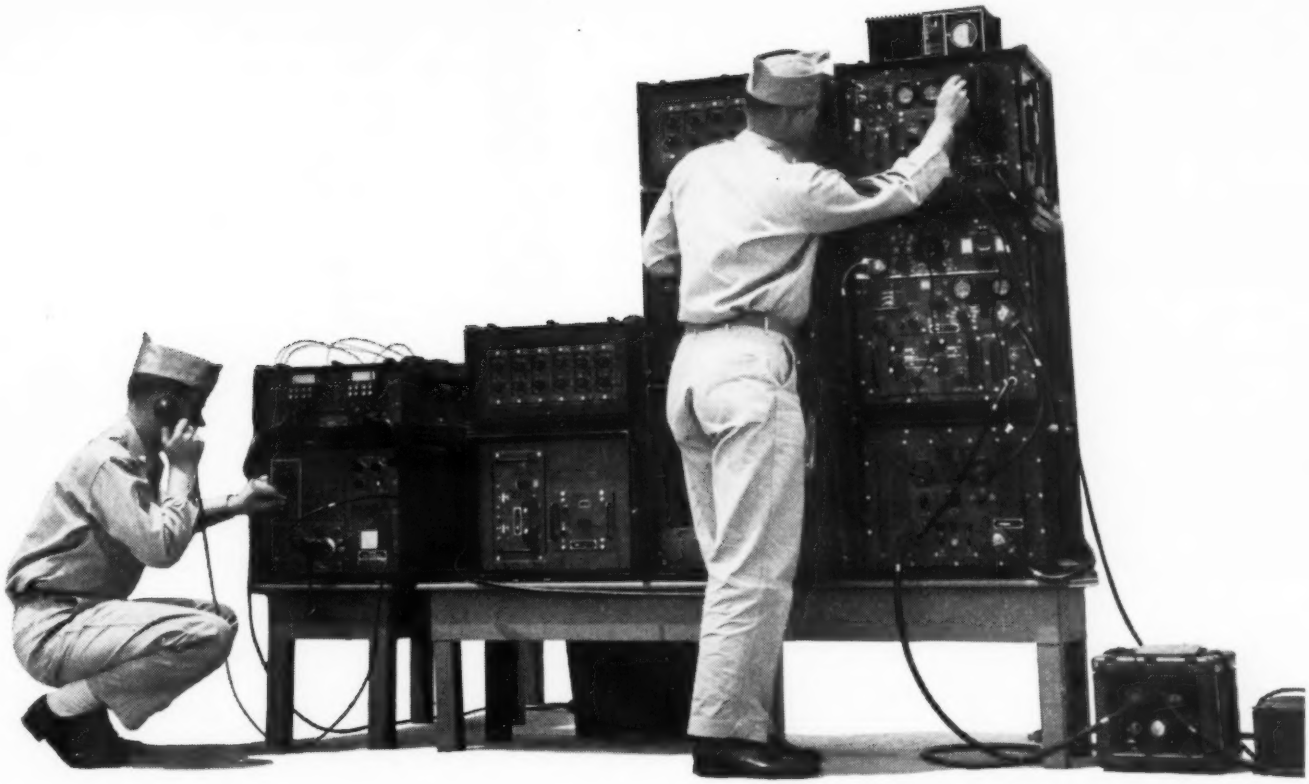
What this implied to the engineers at the Signal Corps Laboratory was of great importance, for it indicated that moving parts may be replaced by transistors in the electronic systems of guided missiles and radar controlled beacons where moving parts are at present a serious problem.

Transistors already have been used to replace low-powered radio tubes in many instances. These devices do their work when an electronic impulse is passed through its layers of crystal, similar to those found in the early radios of dad's boyhood.

In this case, the powered transistor is described as using anything over five watts.

Moving parts in many electronic instruments cause serious problems which

(Please turn to page 43)



Tuning in for radio transmission. Each item of equipment is not much bigger than a suitcase.

A leapfrog telephone system for the Armed Forces!

A new communications system, which takes to the air when water or rough terrain prevents the stringing of wires, has been developed for the U.S. Signal Corps by Bell Telephone Laboratories.

The system uses cable and radio relay interchangeably over a 1000-mile range. It is easily portable, unaffected by climate, and rugged enough for global use. Twelve voices travel at once over a pair of wires or radio waves—as clearly and naturally as over the regular telephone system.

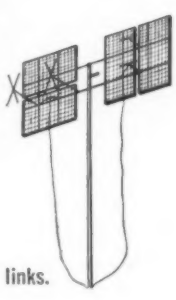
This is the first time a completely integrated wire and radio system of this large a channel capacity has been available for tactical use by the Armed Forces. It is already in production at Western Electric, manufacturing and supply unit of the Bell System.

The new system is a joint achievement of the Signal Corps, Bell Laboratories and Western Electric . . . one of the many results of long and fruitful co-operation. It shows again how techniques which the Laboratories develop contribute to our national strength.

Bell Telephone Laboratories

Improving telephone service for America provides careers for creative men in scientific and technical fields

Amplifiers like this are used every 5¾ miles in the cable portions of the system. They are weatherproof, can be used on a pole or the ground, and will even work under water. The system uses a spiral wound cable developed by the Signal Corps.



Easily raised antennas send or receive for the radio links.

construction and maintenance DIGEST

- **Block that bolt**
- **Die-hard battery**
- **Grounding to pipe**
- **Stubbornest anchor**
- **New small insulator**

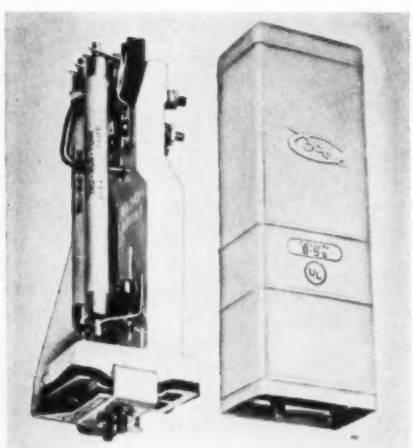
ublished every week to help you get the ost out of your materials and supplies dollar

by C. J. Reynolds, Stromberg-Carlson

The few dollars you spend on *reliable* equipment today will be repaid a hundredfold in lower maintenance costs for years to come. Protect your investment with the double guarantee offered by Stromberg-Carlson. First, leading manufacturers build this equipment, and guarantee it. Second, because we recommend and sell this equipment to the telephone industry, we *also* guarantee its performance!

Protect telephones from lightning

No larger than a good-size candy bar is the Cook 09u telephone protector shown here. But it can save you a lot of grief and you can protect single circuits, both indoor and out.



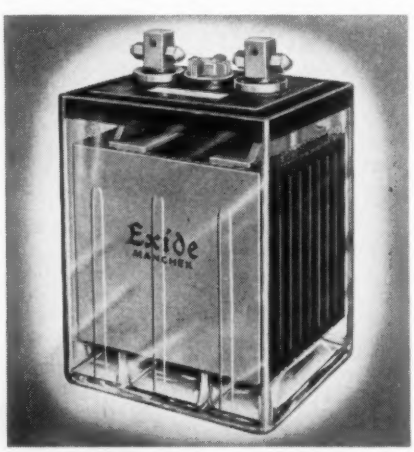
Individual circuits are protected by small unit, measuring 6"x2½"x1¾".

The body is a single piece of heavy white glazed porcelain. Lightning arrestors are two Tru-Gap dischargers, two flat carbons mounted on a copper ground, and two A-9u 7-amp. lavite fuses. Neoprene gasket locks out insects, dust, snow, etc.

Protect yourself from battery failures

You can use Exide Manchex Batteries for central office and private branch exchange equipment, and be sure you'll get a supply of power when you need it. These batteries have been proven daily in exchanges of every size, and for 67 years Exide Batteries have been serving the telephone industry.

The manchester positive plate with its exclusive button-type construction provides exceptionally



Old age, even high discharge rates, have little effect on this battery.

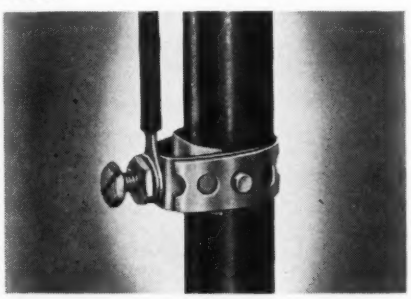
long life. Latest developments on molded glass jars permit compact space-saving installation.

Heavy terminal posts with copper inserts provide extra conductivity for sustained voltage at high discharge rates. Microporous rubber along with slotted plastic separators, are impervious to chemical and electrical reactions. Plastic spacers assure plate alignment.

Want a good station ground for ⅜" to 1¼" pipe?

For all telephone, radio and signal circuit station grounds, here is a clamp with a tighter grip than a blonde clinging to a sailor's arm.

It's made by Reliable Electric Company, and has design principles which have been proven in the field to maintain high-pressure contact and maximum conductivity to the joint. This vise-like grip gives you the dependable grounding you need.



Station ground clamp is adjustable for grounding to water pipe, gives maximum conductivity to joint plus high-pressure contact.

The Reliable station ground clamp is for ⅜" to 1¼" pipe, easily adjusting for any size in that range. It is made of tinned copper strip. The screws and nuts have close-fitting threads.

For a solid station ground, ask your Stromberg-Carlson representative about Reliable station ground clamps.

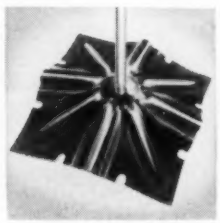
Best way to anchor guy wires

A guy-wire anchor has to do many things for you. It must hold the guy firmly in place, by getting a strong grip on the soil it's planted in.

It must be easy to install, and it must have plenty of underground surface to hold it in place.

You can expand the Chance 8-Way expanding anchor with only eight or nine sharp blows. Its eight plates open to a full width that puts as much as 63% of the anchor under undisturbed earth. The guy load

8-Way anchor before installation.



After expansion.

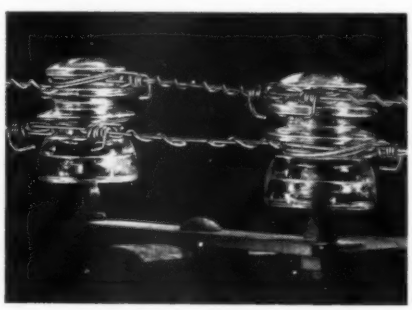
is distributed evenly over all of these blades, for maximum holding power.

There is no waste space between blades—when expanded, the anchor forms a complete pyramid-shaped square, providing a strong foothold. Sizes from 60 to 200 sq. in. in area.

Smaller, lighter insulator for point transposition

Here's the answer to your demand for a small, light insulator for point transposition.

Weighing almost 25% less than its predecessor, the Hemingray Number 56 insulator has several important advantages. It's grooved just right to hold wire firmly. It's small and easy to install. Requires **no** special hardware, and goes on standard pins.



You'll get years of reliable service from each Hemingray insulator, because they are unaffected by sudden or seasonal temperature changes, do not age or deteriorate. All surfaces are, of course, impervious to moisture.

Distributed by

Stromberg-Carlson®

Factory, General Offices:
ROCHESTER 3, NEW YORK

Sales Offices: Atlanta 3, Chicago 6, Kansas City 8, Rochester 3, San Francisco 3. Mfg. Branch, Dallas

may possibly be eliminated with the transistor. Sparks and electrical activity generate an unwanted noise in radios, and reduction of this "hash" ups costs with required extra filters and shielding.

The maintenance of small dynamotors and vibrators in electronic devices is also a problem. The motors must be taken down to replace brushes and worn out bearings. Constant make and break shortens the life of vibrator devices.

The tiny transistor, smaller than a peanut, has nothing that will move, and its future has engineers intrigued with the possibility of replacing moving parts with stationary fixtures.

Other applications for these transistors may be possible in jeep radios, in tanks and aircraft, fire-control mechanisms coordinating radar in guns and planes, ship and shore batteries, and a portable electric megaphone which weighs less than a pound and draws current only when in use.

V V

Railroad Association to Hold Communications Meeting

The Communications Section of the Association of American Railroads will hold its 31st annual session at the St. Francis Hotel, San Francisco, Cal., on May 17, 18 and 19.

R. A. Hendrie, general superintendent communications, Missouri Pacific Railroad is chairman of the section and will preside at the session.

Invitations have been extended to, among others, Hon. G. C. McConnaughey, chairman of the FCC.

The standing committees have prepared specifications and reports on 66 items varying from pole line construction to microwave which will be presented and discussed at the session. It is expected that the reports, in book form, will be distributed the latter part of March giving the members ample time to review and to prepare comments thereon.

In addition to addresses by railroad and FCC officials, special papers and talks on items of current concern have been scheduled as follows:

A paper on "Electronic Frontiers" by D. E. Noble, vice president in charge, communications and electronics division, Motorola, Inc. The section may well use the title from Mr. Noble's paper "Electronic Frontiers" as the theme for the session.

A paper on "Television—Its Application to Railroading," by William Ussler Jr., project engineer of the Philco Corp.

"Significance of New Techniques in Carrier Equipment," to be presented by Tate B. Collins, division manager, Automatic Electric Sales Corp. —discussing the significance of new electronic techniques such as printed circuitry, transistors, diodes, miniaturization, etc., as they will affect engineering and maintenance problems of the railroads communications departments.

Dr. E. W. Greenfield, head, electrical engineering section, Kaiser Aluminum & Chemical Corp. presenting a paper entitled "Aluminum Communication Conductors"—discussing the importance of aluminum as an abundant element, its availability and price, the basic physical and chemical characteristics of aluminum conductors in communication systems, present and future.

In addition to the foregoing papers by commercial representatives, the following subjects will be presented by representatives of railroads:

J. W. Brannin, electrical engineer, communications department, Southern Pacific Co. describing "Intercity Dialing on the SP Lines."

Report on "Mechanized Car Reporting Systems on the Santa Fe," given by L. R. Thomas, electronic engineer of that company.

A panel discussion scheduled on "Fixed Radio versus Walkie-Talkie in Cabooses."

A. E. DeMattei, superintendent of communications, Southern Pacific, will arrange a display and demonstration of the Southern Pacific radio system. Opportunity will be given to the representatives to view and discuss this display.

Answers to Traffic Questions On Page 22

(1) Yes.

(2) Yes.

(3) Yes.

(4) The operator will enter the information on the ticket, give the report, if necessary, and proceed as directed.

(5) Yes.

V V

Defense Materials Handbook Offered by Commerce Department

Publication of a handbook on the Defense Materials System was announced recently by the Business and Defense Services Administration, U. S. Department of Commerce.

The 41-page booklet titled "The Defense Materials System in Our American Industry" is now on sale by the Superintendent of Documents, Government Printing Office, and the Department of Commerce Field Offices at 25 cents a copy.

Sinclair Weeks, Secretary of Commerce, in "A Message for Industrial

XUM

Management," that serves as a foreword, stresses the need for a functioning material control system designed to permit rapid industrial mobilization in case of war.

"DMS serves this purpose," the foreword continues. "The rules have been made simple. All except the most essential paper work has been eliminated. Industrial contractors and subcontractors for programs of the Department of Defense and the Atomic Energy Commission have the responsibility for acquainting themselves with the few remaining rules and regulations.

"This manual is designed to aid in this task. It has been arranged so that each type of contractor and supplier may find a handy reference to the general rules applicable to his defense contract operations."

Key questions and answers on the essential points of the Defense Materials System precede the detailed description and instructions for defense contractors.

In recognition of the importance of the Defense Materials System to our national security, the Department of Defense requires all of its contractors to agree that they will follow the provisions of applicable rules and regulations of the Business and Defense Services Administration, including DMS Regulations, in the procurement and use of materials required for the performance of their contracts.

V V

Southern Continental Names Campbellsville, Ky., Manager

The Southern Continental Telephone Co., Cookeville, Tenn., through its vice president and general manager, Homer J. Wright of Elizabethtown, Ky., has announced the appointment of O'Neil Kidd as district manager of the company's Campbellsville district to fill the vacancy created by the recent death of J. L. Zieg.

Mr. Kidd was originally employed by Southern Continental at Somerset, Ky., in 1946 as a lineman on the construction crew. In 1947 he was promoted to city repairman and installer in Somerset. In the early part of 1951 he was transferred to Scottsville, Ky., as local manager, and in November, 1953, he was promoted to commercial superintendent on the Kentucky general manager's staff and transferred to Elizabethtown, which position he filled until his appointment as district manager for the company's Campbellsville district on Mar. 10.

Senator Nelson, Gary Group General Counsel, Dies

Sen. Arthur E. Nelson, 62, general counsel to the Gary Group Companies, including Associated Telephone & Telegraph Co. and Continental Telephone Co., and former United States senator from Minnesota, died on Apr. 11 in Chicago. He entered the hospital the day before, following a heart attack.

SEN. A. E. NELSON

Mr. Nelson's home was in St. Paul, Minn., where he was mayor from 1922 to 1926.

From November, 1942, to January, 1943, he served in the U.S. Senate.

Senator Nelson had more than 30 years of experience in public utility law. He formerly was corporation counsel for the city of St. Paul. He handled rate cases before more than one-third of the state utilities commissions, primarily for the Gary Group of telephone companies. He was a member of both the Minnesota and the Illinois Bar.

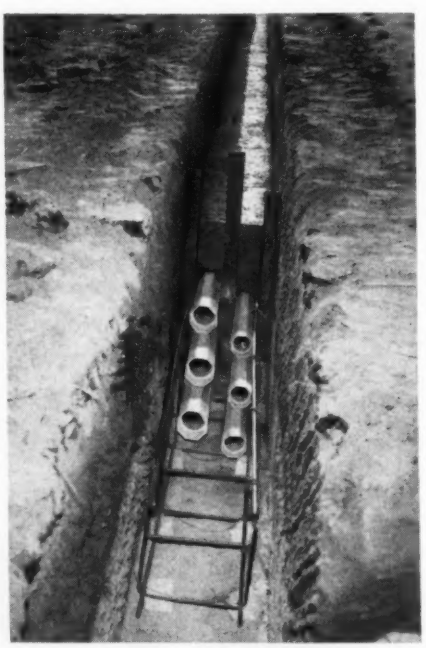
He is survived by the widow, Alice C. of St. Paul, and three sons, Arthur of New York, James L. of Denver, both attorneys, and Roy Hugh of St. Paul, and a daughter, Alice Ann Nelson.

V V

"To have real retirement security with freedom we must, through investments, in homes, in bonds, in stocks, in life insurance, etc., build the program which will exactly fit the need of ourselves and our families. Government and employer plans can only be a base on which we can build. This is the challenge to employers and all others interested in our free competitive enterprise system."—A. D. MARSHALL, *manager, employe benefit services department, General Electric Co.*

When duct erection problems began to multiply . . .

OCT-O-DUCT Was The Best All-Around Answer



EXCESSIVE groundwater was just one of several special problems on this underground duct system at the new college campus at Goleta, Calif.

Future roads made special reinforcing in the trench necessary, and plans required running both telephone and power circuits side-by-side.

Soapstone OCT-O-DUCT was the easy, inexpensive answer to every problem. Many thousand feet of 3-inch and 4-inch duct were laid in the same trench.

OCT-O-DUCT's low price and low installation cost, combined with its outstanding electrical, chemical and mechanical characteristics, have made it first choice with contractors and construction departments in telephone and power utilities throughout the West.

Write for Specifications Bulletin 54A and for Installation Manual 54B.

SOAPSTONE DUCT COMPANY

110 Linfield Drive, Menlo Park, California

General of Ohio Appoints R. H. Rawlings Chief Engineer

Richard H. Rawlings has been appointed chief engineer of the General Telephone Co. of Ohio, Clare E. Williams, president, announced on Apr. 7.

Mr. Rawlings began his career in engineering and operations with the International Telephone & Telegraph Corp. in 1927 as a student engineer.

R. H. RAWLINGS

In 1928 the International Telephone & Telegraph Corp. assigned Mr. Rawlings to Uruguay, Argentina and Chile, where his work involved toll transmission and installation of the first South American transcontinental telephone line.

From 1932 to 1935 he served as engineering assistant to the Buenos Aires regional organization responsible for IT&T properties in Argentina, Chile, Peru, Uruguay, and southern Brazil. In 1935 the corporation appointed him operating superintendent of Chile Telephone Co., where he was responsible for plant, traffic and engineering departments. In 1938 he became managing director of the Rio Grandense Telephone Co. in southern Brazil. In 1942 he became a director, in Rio de Janeiro, of four IT&T Brazilian subsidiaries.

Mr. Rawlings then became operations vice president of the Porto Rico Telephone Co., and in 1946 he was appointed operations vice president of the Cuban Telephone Co. and of the Radio Corp. of Cuba, subsidiaries of IT&T. In 1948 the corporation assigned him to Spain, where he became technical advisor to the Spanish National Telephone Co., and a director of the Spanish Telephone Co. and of three IT&T Spanish subsidiaries.

Mr. Rawlings was born in Rutland, O., attended Harvard College where he received an A.B. degree in Economics in 1925 and an S.B. degree in Electrical Engineering in 1927.

RAYTHEON RECTIFILTERS*
(BATTERY ELIMINATORS)

Raytheon RectiFilteRs are happier left alone. Except for a visit every twelve months or so for routine maintenance, they are content to go on providing D. C. output voltage year after year without attention.

That's an outstanding virtue in the Telephone Industry where trouble-free dependability is so vitally important.

Raytheon RectiFilteRs eliminate the need for storage batteries . . . automatically provide closely filtered and stabilized D. C. output voltage at low cost . . . release charging cable pairs for revenue producing service.

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INTERNATIONAL OPERATIONS: 589 FIFTH AVE., NEW YORK CITY
RAYTHEON PRODUCTS INCLUDE: RectiChargeR* battery chargers; RectiFilteR* battery eliminators; Voltage stabilizers (regulators); Transformers; Tubes and other electronic equipment.
*Reg. U. S. Pat. Off.

Specify Raytheon RectiChargeRs and RectiFilteRs for completely dependable Telephone service. Your supplier offers a complete line for all requirements. Ask him for details or write direct.

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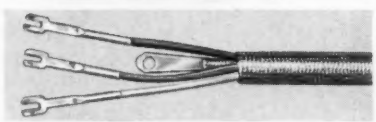
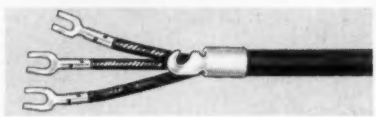


BUY!

COTTON



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NYLON covered cords are a relatively new development in telephone cords. Their fine smooth texture makes them the preferred cords for switchboard use. They give long service. Preferred by operators because of their fast, easy handling.

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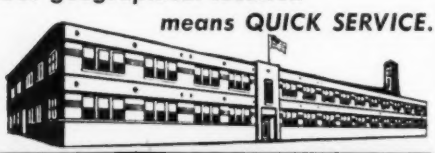
Our geographical location means QUICK SERVICE.



RUNZEL
Cord and Wire Co.
4723 W. MONTROSE AVE.
CHICAGO 41, ILL.

news on new PRODUCTS

EARTH BORER —A portable mechanical earth borer has been developed by J. H. Holan Corp.

The new Holan borer, known as Model 4401-M, is offered for engine-wise or counter-engine rotation drives, and is furnished as a complete kit. Various types of augers and cutting heads are available.

Suspended by derrick and winch line, guided by a crew man at the hole, and driven by power-take-off through a telescoping torque arm, the digger is

highly versatile for reaching out over ditches and other obstacles. Simple manual disengagement of the winch line puts the derrick in service for pole setting. An optional feature is a ratchet overload clutch which absorbs the shock of obstructions in the hole and eliminates the need for changing shear pins.

Further features are found in the

lightweight, tubular torque arm drive shaft which offers a rigid assembly. An optional hardened-edge auger and a cutting head with replaceable points and pilot bit makes the unit adaptable for difficult boring operations.

The Holan borer has a gear case designed exclusively for the pinion and ring gear set. The heavy-section malleable iron housing is of rugged construction to resist impact in the field. Request NP 369.

• • •

COIN CHANGER—A new coin change maker is claimed to increase usage of coin operated devices by making proper coins readily available.

Klopp Engineering, Inc., who announce the new changer, are also manufacturers of electric and manual coin sorting and counting-packaging machines.

The new changer is recommended for locations of public telephones.

The changer can be mounted on

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Please have the manufacturer send me without obligation the literature indicated by the following numbers:

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NP373_____; NP374_____; NP375_____.

Name . . . . . Title . . . . .

Company . . . . .

Street . . . . .

Town and State . . . . .

4/16/55

walls, counters or stands. A hood is also available for weather protection when placed in outdoor locations.

Four models of the Klopp changers are available for providing change for quarters, dimes and nickels and special models are also provided for dispensing tokens. Request NP 370.

• • •

ONE-MAN-FORCE ACCOUNTING MACHINE—International Business Machines Corp. has introduced a new "one-man-force" office machine which not only eliminates many costly, repetitious clerical tasks, but also shaves to a fraction the time spent on the paper work that overloads an office force and a company budget.

With the new machine, called the IBM Cardatype Accounting Machine, wasteful copying is done away with. Operations that involve several departments of office or plant—say, order writing or stock record accounting—may now be done at a centralized point. Furthermore, the entire set of related forms, tickets, and documents needed are produced simultaneously by one Cardatype operator in less time than was required before to prepare one of the forms. One feature of the Cardatype is an automatic computing unit which permits calculations to be made, according to a preset program, on any job given to the machine.

The Cardatype is particularly adaptable to a smaller business operation, but any size office will profit from the time and cost savings it introduces.

IBM also has announced a new, high-speed punched card sorting machine, known as the Type 83 Sorter.

The rapid-fire sorter takes a stack of 1,200 punched cards, mixed in random order, and at the rate of 1,000 cards a minute places them in numerical or alphabetical order.

The new IBM Cardatype has three units: An IBM electric typewriter, an auxiliary numerical keyboard, and IBM equipment for reading punched cards and automatically controlling the entire Cardatype operation according to a preset program. Three more connected, unattended typewriters may be installed beside the Cardatype for the production of related forms such as shipping tags or stock selection tickets.

In addition, there is the automatic computing unit. IBM card punching or tape punching units and a second auxiliary keyboard may also be added.

The newly-designed IBM Type 83 sorter also has many features that will permit it to plow through an office's roadblock of paper work. The hopper in which cards are placed for feeding into the machine holds 1,200 cards. The stacker pockets which receive the sorted cards can be adjusted to hold 400, 565, 735, or 900 cards. Sorting on a specific card-punch position can be suppressed by the use of one of 12 buttons, while a sorting switch and two editing switches determine which combination of punches falls into which pockets. An edit switch rejects cards that do not conform. Request NP 371.

• • •

TRUCKS — Six additional International truck models, the R-1700 series, powered by a new, high-torque, valve-in-head 140-horsepower gasoline engine, have been introduced by the Motor Truck Division of International Harvester Co.

The new models, with gross vehicle weight ratings from 16,000 to 20,000

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Do the job faster, better with high quality GREENLEE Car Bits for pole work . . . Electricians' Auger Bits of special design for electrical installation work . . . Bell Hangers' Drills of the "Feeler Bit" type . . . Expansive Bits for boring ½" to 4" holes . . . and GREENLEE Angle-Screw Drivers which eliminate pre-boring for angle-screw installations.

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Aluminum
SIMPLEX REEL JACK

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The new Simplex A1029 Reel Jack increases your men's efficiency by minimizing fatigue. Its lighter weight is a distinct advantage in loading, unloading and carrying to location, and its single-acting mechanism provides much easier lifting. Capacity 10 tons; weight 83 lbs. For reels up to 84" dia. Supplied with sturdy, laminated oak "T" base and 5' lever bar. Write today for full information.

Other SIMPLEX lightweight Leaders
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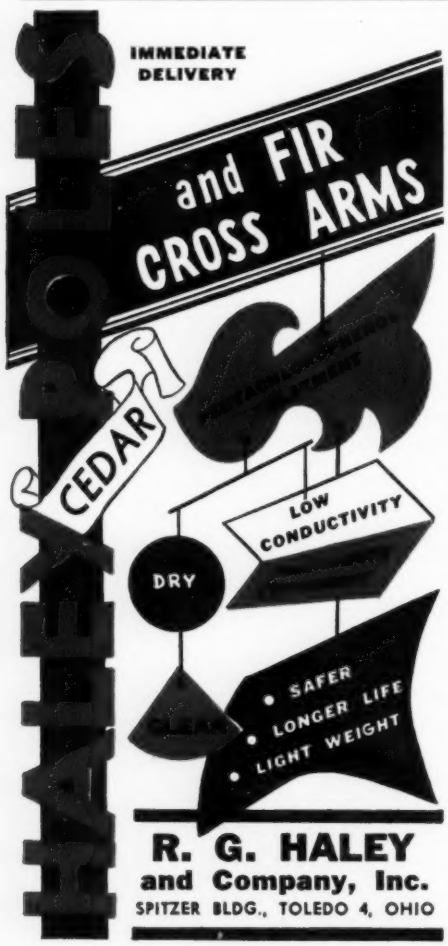


R. G. HALEY and Company, Inc.
SPITZER BLDG., TOLEDO 4, OHIO

pounds, are the R-1700, R-1701, and R-1702 Standard models, R-1703 Schoolmaster, R-1704 Loadstar and R-1705 Roadliner.

Powerplant of the newly-introduced units is the International Black Diamond 264, which delivers 234 pound-feet of torque at 2,000 rpm. Ratio of brake horsepower-to-cubic-inch displacement in the engine is .53.

The R-1705 Roadliner is an exceptionally efficient high-speed, moderate-weight tractor rated at 35,000 pounds maximum gross combination weight. The three standard models are equally outstanding for straight truck service. With the Loadstar, Harvester offers a model for hauling heavy, compact loads over rough terrain, which subjects truck to high degree of twisting and shock.

The six-cylinder International Black Diamond 264, newest of 32 engines available for International trucks, incorporates major advancements in engine design. These affect favorably such benefits as economy, greater performance and longer life, in addition to the significant power advantage. Displacement is 264.33 cubic inches.

Important factors in achieving fuel savings in the engine are a newly-designed dual-barrel downdraft carburetor and latest-type manifolding. Engineering advance marks the plant throughout. It features a new 11-inch clutch, controlled-expansion, three-ring aluminum pistons and positive full-pressure lubrication. A new high-lift 50-degree ramp camshaft assures quieter valve operation and eliminates breakage. Exhaust valves are stellite-faced slo-roto type with silchrome seats.

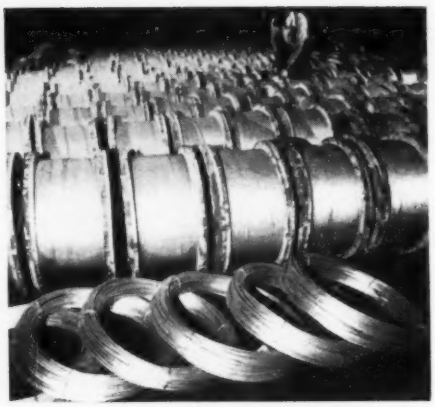
Each of the new models is set up standard with transmissions, axles, propellor shafts, six-volt electrical system and hydraulic brakes of a size and type required for outstanding performance and service life when used with the BD-264 engine. Standard transmission is four-speed; optional transmissions available include five-speed with overdrive and five-speed with direct in fifth.

Rear axle is full-floating, single-reduction type. A two-speed rear axle is optional.

Wheelbases are 130, 142, 154 and 172 inches. Request NP 372.

• • •

ALUMINUM COATED WIRES—The Page Steel & Wire Division of American Chain & Cable Co. has just completed a survey of some 20-odd markets where it is expected its new hot-dip aluminum corrosion resistant wires, marketed under the name of Acco Aluminized, will be used in volume.



Tests show resistance to weathering in industrial and rural atmospheres to be two to six times as long as galvanized of equal coating thickness, according to E. B. Brant, production manager of the Page Steel & Wire Division.

"Hot-dip aluminum coatings are not only outstanding in their ability to resist corrosion on wires used for general mechanical application," Mr. Brant said, "but also in many of the highly specialized applications in the communications and electric utility fields."

While not intended as a prime electrical conductor, aluminized wire offers a definite increase in electric conductivity and added life under conditions of high humidity, of interest to the telephone and telegraph industries and for electrified railroads and railway signal systems.

Aluminized strand (three-wire and seven-wire) is now available in common, Siemens-Martin, high strength and utility grades. Coatings are comparable in thickness to that of Grade A galvanizing and physical properties conform to ASTM Specification A-122-52-T for galvanized strand, Mr. Brant said. Request NP 373.

• • •

POLE TOPPER—The Utilities Division of Osmose Wood Preserving Co. of American has introduced a new product called Pole Topper, a combined preservative and anti-weathering material to protect pole roofs.

This preservative has been developed by the Osmose Research Division after four years of experimenting with a large number of possible materials ranging from fiberglass cloth to fly ash. It is easy to apply with either brush or putty knife.

The company recommends that utilities interested in pole top preservation include a five-gallon pail or smaller container on every line truck so that roof treatment can be applied whenever a pole is climbed for other reasons. Request NP 374.

FAULT LOCATING WHEATSTONE BRIDGE—A new Wheatstone and fault locating bridge designed for convenient operation in the field is offered for numerous applications throughout the electrical, electronic and communication industries by Electro-Measurements, Inc.

This bridge has been engineered for rough use in the field, yet offers excellent readability with accuracy and reliability. It is supplied in a strong, light-weight case that has been completely weatherproofed. Direct straight line readings are made on ESI's exclusive Dekadial. All dials have been designed for ease of operation so that even personnel wearing gloves can operate them without difficulty. Precision structural components including ceramic rotary switches with solid silver alloy contacts and firm positioning switch detents assure good performance and accurate switch settings.

As a Wheatstone Bridge, resistance within a zero to 1.2 megohm range can be measured directly. For fault locating measurements, Varley Loop Ratios offered by the instrument are 1/1, 1/4 and 1/9; Murray Loop Ratios include 10, 100, and 1,000. The use of precision wire wound resistors assures accuracy when making measurements

of resistances and fault distances with this instrument.

In addition, Electro-Measurements, Inc., has provided several extra features to simplify measurements. These include a new loop selecting switch arrangement built directly in the Dekadial and a new battery reversing switch to check error from external line voltage sources. Battery power is used only when the galvanometer pushbuttons are depressed. When necessary, these buttons can be locked while making measurement settings. All battery power is automatically disconnected from the bridge when the instrument lid is closed. Batteries are isolated from the electrical components in a special leakproof compartment which when opened facilitates easy cleaning and simple battery replacement. Provisions are made for the use of an external galvanometer and external batteries when necessary. This external equipment can be easily and quickly connected to the special binding posts provided. When accessory equipment is used, the internal meter movement and batteries are automatically disconnected from the circuit.

In the field, this instrument can also be used as a continuity checker, and provisions have been provided for making capacitance checks for open line test with the use of an external capacitance standard and tone source. In addition, the bridge rheostat is available for use as a precision four dial decade box. Request NP 375.

V V

C. L. Lineberger Joins Suttle Company

LeRoy T. Carlson, president of Suttle Equipment Co., announced recently that C. L. Lineberger, former engineering consultant, has become associated with Suttle as sales manager of the manufacturing division. His office is located at 135 S. La Salle St., Chicago, Ill. The Suttle Equipment Co. plant is in Lawrenceville, Illinois, and is en-

You don't have to be a Monkey—

. . . to loosen frozen bolts on utility poles. The new Aerosol Kroil, which can be squirted with one finger, loosens the most stubborn frozen metal parts . . . FAST. More than 12,000 shops depend on Kroil whenever frozen metal parts threaten to tie up production or waste manhours. In this new package it is the finest rust-busting tool ever . . . shoots a stream 3 ft. yet won't leak. One customer said, "before trying Kroil we broke off every nut (on our heat treat trolleys), since then we have not lost one and have decreased the repairing time from 30 minutes to about 6 minutes per trolley."

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Use Kroil on all dismantling jobs; for filing, sawing, honing; . . . also keeps air driven tools running freely.

Just try Kroil on a make good basis. Case of 12 Aerosol Kroil 12 ounce cans $21.60 f.o.b. factory or send $2.35 for one can postpaid. If it doesn't perform to suit you, return the empty can for refund.

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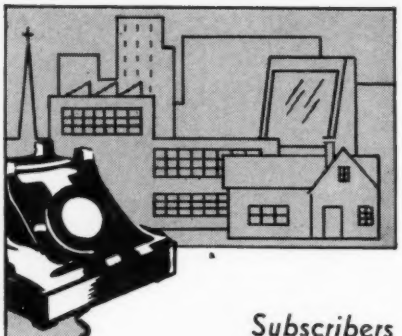

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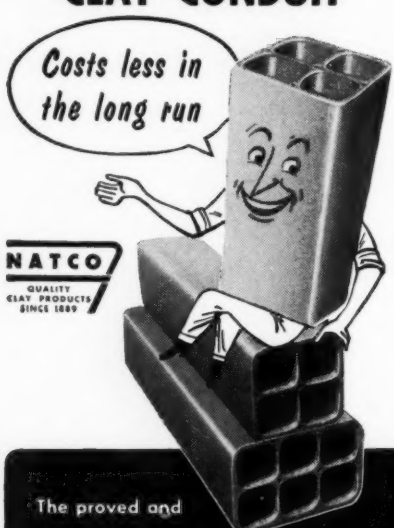

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C. L. LINEBERGER

gaged in the manufacture and distribution of telephone equipment, agricultural testing and weighing products, and laboratory instruments.

He learned telephone "basics" under fire as a communications officer in the European Theater in World War II, where he also served as an intelligence officer and town major. He is past national president of the National Society for Business Budgeting.

Suttle Equipment Co. has developed additional product lines in the field of telephony, agricultural testing and weighing equipment and scientific instruments for control purposes. In response to requests for development of new items for the telephone field, the company has acquired additional manufacturing equipment, both general and specialized in nature, to provide new items for the telephone field.

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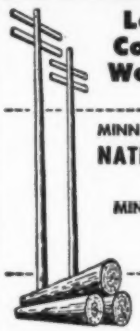
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aerial or underground—(requires messenger)
Color coded—solid tinned copper conductors, rubber insulated (to prevent moisture trouble even if outer jacket is pierced). UNUSED A-1—1000 ft. continuous lengths on no-charge steel reel (less, add 1c ft.).

5 pair $\frac{1}{2}$" O.D. per foot 5c
10 pair $\frac{5}{8}$" O.D. per foot 10c
5 pair (as above) 100-200 ft. coils, foot 4c

"SPIRAL 4" 2 pair Neoprene
#18 ga. tinned copper (stranded) rubber insulated conductors—steel reinforcing wires imbedded inside tough Neoprene jacket —$\frac{3}{8}$" O.D.—extremely resistant to abrasion & sway damage—aerial or underground (500 lb. tensile strength). 1320 ft. ($\frac{1}{4}$" mile) continuous length on no-charge reel—connector with 6 mh. loading coil each end—
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(less, per foot 5c)

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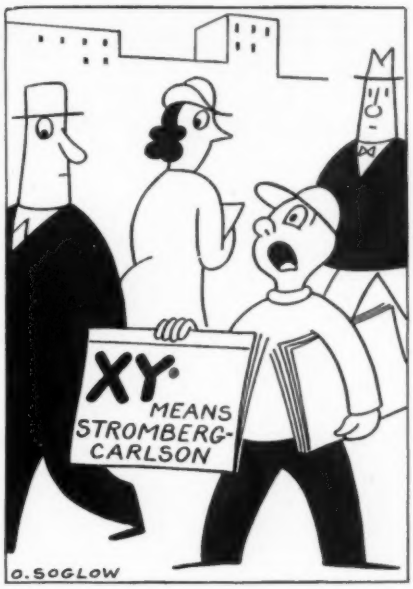

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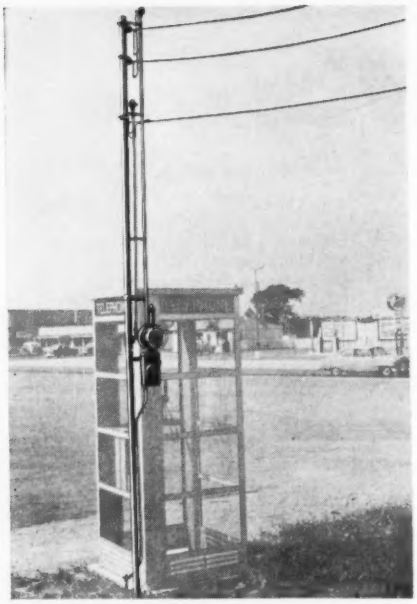

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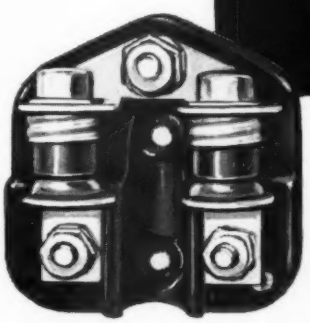

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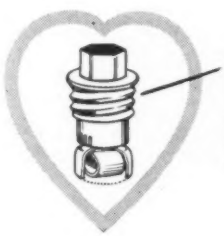

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